12/27/79 "Page 545"

**United States Listings**

# radio amateur callbook magazine

In this issue . . .

- 303,590 licensed radio amateurs! 44,026 new licenses included, issued since the Winter 1976 edition.
- 69,379 changes in listings!
- World Wide QSL Bureaus!
- Slow Scan Television Directory
- Zip Codes and License Class on all listings!
- Stop Press — late QTH's!
- Then & Now — Call letter changes!
- Silent Keys deleted from this issue!
- QSL Managers Around the World!
- Radio Amateur Prefixes of the world, with map!
- A.R.R.L. Countries List!
- Great Circle Bearings!
- International Postal Information!
- Standard Time Charts!
- Census of Amateur Radio Licenses of the World!
- Census of Amateur Radio Licenses of the U.S.!
- Plus many other features!

*The only publication listing licensed radio amateurs throughout the world, since 1920.*

**55th ANNIVERSARY EDITION**
**For use throughout**
**1977**

**$14.95 PER COPY**

WINTER 1976-77

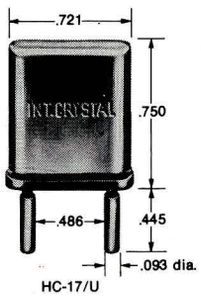
# WHERE RELIABILITY & ACCURACY COUNT

## INTERNATIONAL CRYSTALS

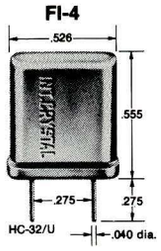
70 KHz to 160 MHz

### HOLDER TYPES

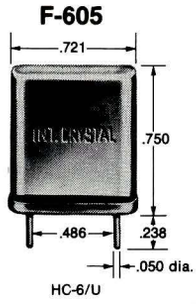
**F-609**




**FI-4**

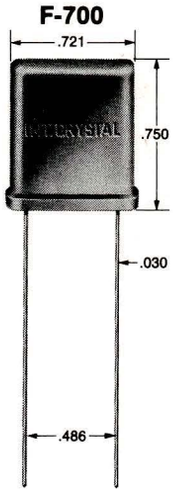



**F-605**

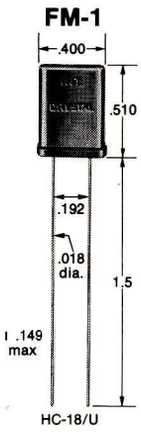



**F605-SL**

**F-700**




**FM-1**

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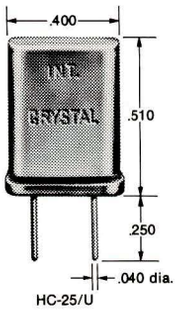
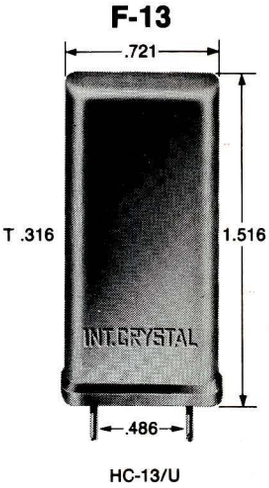



**F-13**

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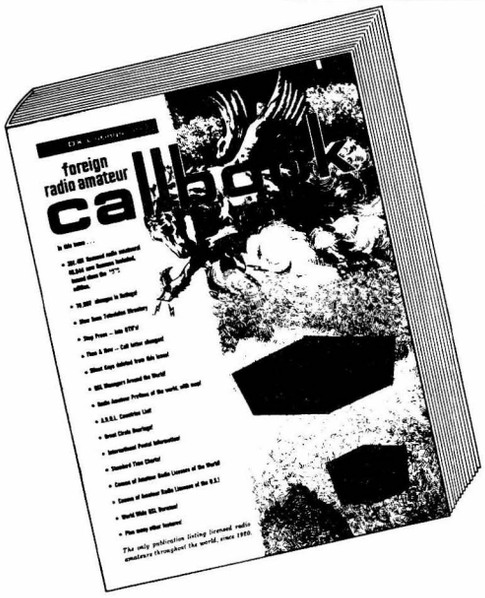


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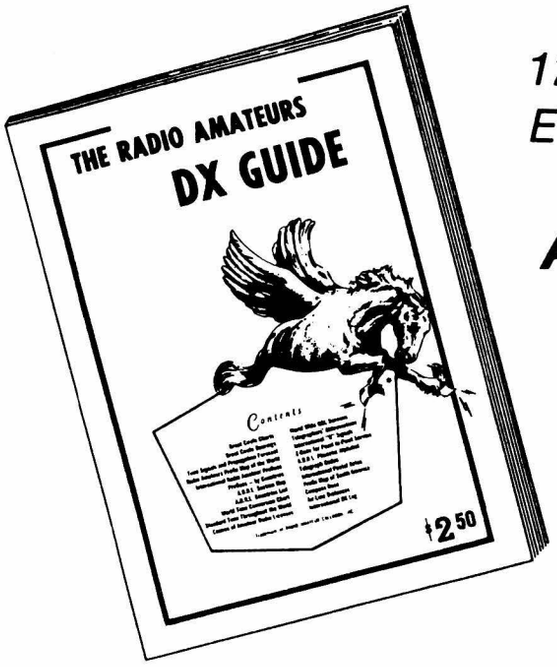


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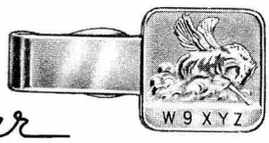


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Make your selection now—and wear your emblem proudly—you've earned it.

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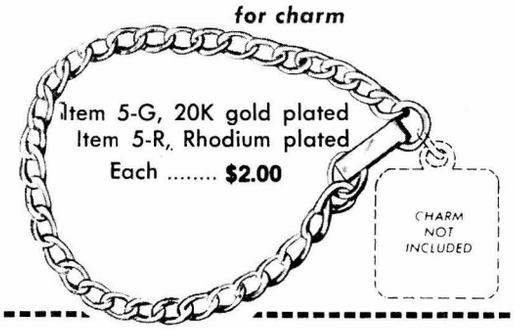
*for charm*

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| 1" x 7" | $3.50 | $4.00 |
| 2" x 8" | $4.25 | $4.75 |
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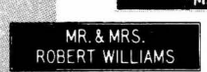

ILLUSTRATIONS
¼ ACTUAL SIZE

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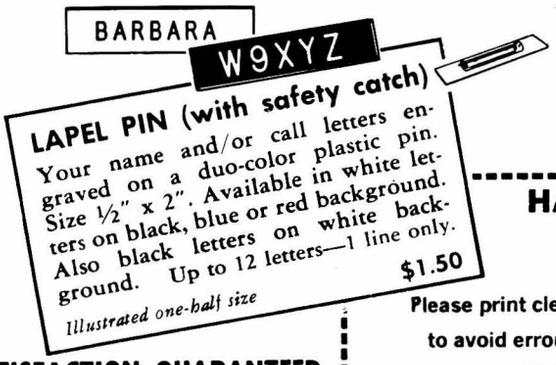


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| ☐ Door or rig | ☐ Walnut Grained ☐ Jet Black | All letters same size Up to 18 characters per line on 4" Up to 20 characters per line on 7" & 8" | ☐ 1"x4" ☐ 1"x7" ☐ 2"x8" | |
| ☐ Exec. Desk Set | ☐ Walnut Grained ☐ Jet Black | All letters same size Up to 20 characters per line | | ☐ Gold ☐ Silver |
| ☐ Lapel Pin | ☐ Jet Black ☐ White ☐ Red ☐ Blue | All letters same size Up to 12 characters—one line only | | |

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| BAA-BZZ | CHINA |
| CAA-CEZ | CHILE |
| CFA-CKZ | CANADA |
| CLA-CMZ | CUBA |
| CNA-CNZ | MOROCCO |
| COA-COZ | CUBA |
| CPA-CPZ | BOLIVIA |
| CQA-CRZ | PORTUGAL |
| CSA-CUZ | PORTUGAL |
| CVA-CXZ | URUGUAY |
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| DUA-DZZ | PHILIPPINES |
| EAA-EHZ | SPAIN |
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| EMA-EOZ | UNION OF SOVIET SOCIALIST REP. |
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| ERA-ERZ | UNION OF SOVIET SOCIALIST REP. |
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| ETA-ETZ | ETHIOPIA |
| EUA-EWZ | BYELORUSSIAN SSR |
| EXA-EZZ | UNION OF SOVIET SOCIALIST REP. |
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| GAA-GZZ | GREAT BRITAIN & NO IRELAND |
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| HBA-HBZ | SWITZERLAND |
| HCA-HDZ | ECUADOR |
| HEA-HEZ | SWITZERLAND |
| HFA-HFZ | POLAND |
| HGA-HGZ | HUNGARY |
| HHA-HHZ | HAITI |
| HIA-HIZ | DOMINICAN REPUBLIC |
| HJA-HKZ | COLOMBIA |
| HLA-HMZ | KOREA |
| HNA-HNZ | IRAQ |
| HOA-HPZ | PANAMA |
| HQA-HRZ | HONDURAS |
| HSA-HSZ | THAILAND |
| HTA-HTZ | NICARAGUA |
| HUA-HUZ | EL SALVADOR |
| HVA-HVZ | VATICAN CITY STATE |
| HWA-HYZ | FRANCE |
| HZA-HZZ | SAUDI ARABIA |
| IAA-IZZ | ITALY |
| JAA-JSZ | JAPAN |
| JTA-JVZ | MONGOLIA |
| JWA-JXZ | NORWAY |
| JYA-JYZ | JORDAN |
| JZA-JZZ | INDONESIA |
| KAA-KZZ | UNITED STATES OF AMERICA |
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| LOA-LWZ | ARGENTINA |
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| LYA-LYZ | LITHUANIA |
| LZA-LZZ | BULGARIA |
| MAA-MZZ | GREAT BRITAIN & NO IRELAND |
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| ODA-ODZ | LEBANON |
| OEA-OEZ | AUSTRIA |
| OFA-OJZ | FINLAND |
| OKA-OMZ | CZECHOSLOVAKIA |
| ONA-OTZ | BELGIUM |
| OUA-OZZ | DENMARK |
| PAA-PIZ | NETHERLANDS |
| PJA-PJZ | NETHERLANDS ANTILLES |
| PKA-POZ | INDONESIA |
| PPA-PYZ | BRAZIL |
| PZA-PZZ | SURINAM |
| QAA-QZZ | SERVICE ABBREVIATIONS |
| RAA-RZZ | UNION OF SOVIET SOCIALIST REP. |
| SAA-SMZ | SWEDEN |
| SNA-SRZ | POLAND |
| SSA-SSM | EGYPT |
| SSN-STZ | SUDAN |
| SUA-SUZ | EGYPT |
| SVA-SZZ | GREECE |
| TAA-TCZ | TURKEY |
| TDA-TDZ | GUATEMALA |
| TEA-TEZ | COSTA RICA |
| TFA-TFZ | ICELAND |
| TGA-TGZ | GUATEMALA |
| THA-THZ | FRANCE |
| TIA-TIZ | COSTA RICA |
| TJA-TJZ | CAMEROON |
| TKA-TKZ | FRANCE |
| TLA-TLZ | CENTRAL AFRICAN REPUBLIC |
| TMA-TMZ | FRANCE |
| TNA-TNZ | CONGO |
| TOA-TQZ | FRANCE |
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| TTA-TTZ | CHAD |
| TUA-TUZ | IVORY COAST |
| TVA-TXZ | FRANCE |
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| YIA-YIZ | IRAQ |
| YJA-YJZ | NEW HEBRIDES |
| YKA-YKZ | SYRIA |
| YLA-YLZ | LATVIA |
| YMA-YMZ | TURKEY |
| YNA-YNZ | NICARAGUA |
| YOA-YRZ | ROMANIA |
| YSA-YSZ | EL SALVADOR |
| YTA-YUZ | YUGOSLAVIA |
| YVA-YYZ | VENEZUELA |
| YZA-YZZ | YUGOSLAVIA |
| ZAA-ZAZ | ALBANIA |
| ZBA-ZJZ | GREAT BRITAIN & NO IRELAND |
| ZKA-ZMZ | NEW ZEALAND |
| ZNA-ZOZ | GREAT BRITAIN & NO IRELAND |
| ZPA-ZPZ | PARAGUAY |
| ZQA-ZQZ | GREAT BRITAIN & NO IRELAND |
| ZRA-ZUZ | SOUTH AFRICA - SW AFRICA |
| ZVA-ZZZ | BRAZIL |
| 2AA-2ZZ | GREAT BRITAIN & NO IRELAND |
| 3AA-3AZ | MONACO |
| 3BA-3BZ | MAURITIUS |
| 3CA-3CZ | EQUATORIAL GUINEA |
| 3DA-3DM | SWAZILAND |
| 3DN-3DZ | FIJI |
| 3EA-3FZ | PANAMA |
| 3GA-3GZ | CHILE |
| 3HA-3UZ | CHINA |
| 3VA-3VZ | TUNISIA |
| 3WA-3WZ | VIET NAM |
| 3XA-3XZ | GUINEA |
| 3YA-3YZ | NORWAY |
| 3ZA-3ZZ | POLAND |
| 4AA-4CZ | MEXICO |
| 4DA-4IZ | PHILIPPINES |
| 4JA-4LZ | UNION OF SOVIET SOCIALIST REP. |
| 4MA-4MZ | VENEZUELA |
| 4NA-4OZ | YUGOSLAVIA |
| 4PA-4SZ | CEYLON |
| 4TA-4TZ | PERU |
| 4UA-4UZ | UNITED NATIONS |
| 4VA-4VZ | HAITI |
| 4WA-4WZ | YEMEN |
| 4XA-4XZ | ISRAEL |
| 4YA-4YZ | INTL CIV AVIATION ORGANIZATION |
| 4ZA-4ZZ | ISRAEL |
| 5AA-5AZ | LIBYA |
| 5BA-5BZ | CYPRUS |
| 5CA-5GZ | MOROCCO |
| 5HA-5IZ | TANZANIA |
| 5JA-5KZ | COLOMBIA |
| 5LA-5MZ | LIBERIA |
| 5NA-5OZ | NIGERIA |
| 5PA-5QZ | DENMARK |
| 5RA-5SZ | MADAGASCAR |
| 5TA-5TZ | MAURITANIA |
| 5UA-5UZ | NIGER |
| 5VA-5VZ | TOGO |
| 5WA-5WZ | WESTERN SAMOA |
| 5XA-5XZ | UGANDA |
| 5YA-5ZZ | KENYA |
| 6AA-6BZ | EGYPT |
| 6CA-6CZ | SYRIA |
| 6DA-6JZ | MEXICO |
| 6KA-6NZ | KOREA |
| 6OA-6OZ | SOMALI |
| 6PA-6SZ | PAKISTAN |
| 6TA-6UZ | SUDAN |
| 6VA-6WZ | SENEGAL |
| 6XA-6XZ | MADAGASCAR |
| 6YA-6YZ | JAMAICA |
| 6ZA-6ZZ | LIBERIA |
| 7AA-7IZ | INDONESIA |
| 7JA-7NZ | JAPAN |
| 7OA-7OZ | YEMEN |
| 7PA-7PZ | LESOTHO |
| 7QA-7QZ | MALAWI |
| 7RA-7RZ | ALGERIA |
| 7SA-7SZ | SWEDEN |
| 7TA-7YZ | ALGERIA |
| 7ZA-7ZZ | SAUDI ARABIA |
| 8AA-8IZ | INDONESIA |
| 8JA-8NZ | JAPAN |
| 8OA-8OZ | BOTSWANA |
| 8PA-8PZ | BARBADOS |
| 8QA-8QZ | MALDIVE IS |
| 8RA-8RZ | GUYANA |
| 8SA-8SZ | SWEDEN |
| 8TA-8YZ | INDIA |
| 8ZA-8ZZ | SAUDI ARABIA |
| 9AA-9AZ | SAN MARINO |
| 9BA-9DZ | IRAN |
| 9EA-9FZ | ETHIOPIA |
| 9GA-9GZ | GHANA |
| 9HA-9HZ | MALTA |
| 9IA-9JZ | ZAMBIA |
| 9KA-9KZ | KUWAIT |
| 9LA-9LZ | SIERRA LEONE |
| 9MA-9MZ | MALAYSIA |
| 9NA-9NZ | NEPAL |
| 9OA-9TZ | ZAIRE |
| 9UA-9UZ | BURUNDI |
| 9VA-9VZ | SINGAPORE |
| 9WA-9WZ | MALAYSIA |
| 9XA-9XZ | RWANDA |
| 9YA-9ZZ | TRINIDAD AND TOBAGO |
| A2A-A2Z | BOTSWANA |
| A3A-A3Z | TONGA |
| A4A-A4Z | OMAN |
| A5A-A5Z | BHUTAN |
| A6A-A6Z | UNITED ARAB EMIRATES |
| A7A-A7Z | QATAR |
| A8A-A8Z | LIBERIA |
| A9A-A9Z | BAHRAIN |
| C2A-C2Z | NAURU |
| C3A-C3Z | ANDORRA |
| C4A-C4Z | CYPRUS |
| C5A-C5Z | GAMBIA |
| C6A-C6Z | BAHAMAS |
| C7A-C7Z | WORLD METEOROLOGICAL ORGANIZATION |
| C8A-C9Z | MOZAMBIQUE |
| D2A-D3Z | ANGOLA |
| D4A-D4Z | CAPE VERDE |
| D5A-D5Z | LIBERIA |
| D6A-D6Z | COMOROS |
| D7A-D9Z | KOREA |
| H3A-H3Z | PANAMA |
| L2A-L9Z | ARGENTINA |
| P2A-P2Z | PAPUA NEW GUINEA |
| S2A-S3Z | BANGLADESH |
| S6A-S6Z | SINGAPORE |
| S7A-S7Z | SEYCHELLES |

# WORLD WIDE QSL BUREAUS



A4 Royal Oman ARS QSL Bureau, Box 981, Muscat, Sultanate of Oman, Arabia
A9X Amateur Radio Association Bahrain, Box 472, Awali, Bahrain, Arabian Gulf
A9X Amateur Radio Association Bahrain, Box 472, Awali, Bahrain, Arabian Gulf
AP Pakistan Amateur Radio Society, QSL Bureau, P. O. Box 65, Lahore, West Pakistan
BV2 China Radio Association, Box 101, Taipei, Taiwan 100, Republic of China
CE Radio Club of Chile, Box 13630, Santiago, Chile of Federacion de Clubes de Radioaficionados de Chile, Box 72, Valparaiso, Chile
CM-CO Federacion de Radioaficionados de Cuba, Box 1, Havana, Cuba
CM8-CO8 QSL Bureau, Box 5, Santiago, Cuba
CN ARRAM, Box 299, Rabat, Morocco, Africa
CP Radio Club Boliviano, Box 2484, Cochabamba, Bolivia
CP5 QSL Bureau, Box 1900, Cochabamba, Bolivia
CP6 QSL Bureau, Box 393, Santa Cruz, Bolivia
C9M LREM, Liga dos Radio Emissores de Mocambique, Box 812, Lourenco Marques, Mozambique
CR9 Cards for Members only Via Hong Kong Amateur Radio Transmitting Society, Box 541, Hong Kong
CT Cards for Members Only Via REP - IARU Member - Rua D Pedro V-7-4, Lisbon 2, Portugal, or Via Associacao De Radioamadores Portugueses, Box 446, Porto, Portugal
CX Radio Club of Uruguay, Box 37, Montevideo, Uruguay
C6A Bahamas Amateur Radio Society, Box 6004, Nassau, Bahama Is
DA-DL DARC Amateurfunk Zentrum, Lindenallee 6, Box 1155, D-3501 Baunatal 1, German Federal Republic or Via DFV-QSL Service, Box 400,6600 Saarbruecken, Fed Rep of West Germany
DM DM QSL Bureau, Box 30, Berlin 55, East German Democratic Republic
DU PARA QSL Bureau, Box 4083, Manila, Philippines
D2A LARA, Box 484, Luanda, Angola, Africa
D4 LARCV, Box 145, Mindelo, Republic of Cape Verde
EA URE, Union de Radioaficionados Espanoles, Box 220, Madrid 4, Spain
EA4 URE, Estacion Oficial de la Ure, Hortaleza 2, Madrid 4, Spain
EI IRTS QSL Bureau, Irish Radio Transmitters Society, IARU Member, Box 462, Dublin 9, Ireland or Via Amateur Radio Society of Ireland, Box 73, Athlone, Ireland
EL Liberian Radio Amateur Association, Box 1477, Monrovia, Liberia
EP Amateur Radio Society of Iran, C/O Box 1000 ARMISH-MAAG, APO New York 09205
ET3 ET3TRC Telecoms ARC, Box 1047, Addis Ababa, Ethiopia International cards for ET3 Calls may be sent via ASMARA QSL Bureau, Box 379, Asmara, Ethiopia, Africa
F1, FB8, FL8, FM7, FP8, FY7 REF QSL Service, 2 Square Trudaine, 75009 Paris, France of Via URC, Box 435-01, 75025 Paris Cedex 1, France
FG7 Radio Club Guadeloupe, Box 387, 97100 Pointe-A-Pitre, Guadeloupe, West Indies
FH8 5R8 QSL Bureau, Box 587, Tanarive, Madagascar
FK8 Aranc, Box 3956, Noumea, New Caldonia
FO8 Radio Club Oceanien, Box 374, Papeete, Tahiti
FY7 Radio Club De Guyane, Box 508,97300 Cayenne, French Guiana
G-GC RSGB, Radio Society of Great Britain C/O Arthur Milne, G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England cards for members only may be sent via ISWL QSL Bureau, 1 Grove Rd, Lydney, Gloucestershire GL15 5JE, England
GD W P Waid, GD3GQX
GI R R Parsons, GI3HXV
GM D R Macadie, GM6MD
GW J L Reid, GW3ANU
HA-HG HSRL, Box 214,1050 Budapest, Hungary
HB, HB Switzerland USKA QSL Bureau, Box 9, CH 4900 Lengenthal, BE,
HC Guayaquil Radio Club, Box 5757, Guayaquil - Ecuador
HC1 Quito Radio Club, Box 289, Quito, Ecuador
HC5 Cuenca Radio Club, Box 307, Cuenca, Ecuador
HI Radio Club Dominicano, Box 1157, Santo Domingo, DN, Dominican Republic, West Indies
HK Liga Colombiana de Radioaficionados - IARU Member-, Box 584, Bogota, Colombia or via Radio Club De Antioquia, Box 2500, Medellin, Colombia
HK via Box 74, San Andres Island or LCRA, Box 584, Bogota, Colombia
HL9 All HL9 Stations - address with call letters and name, c/o United States Forces Korea, OAC OFS, J-6, APO San Francisco 96301
HM KARL, Central Box 162, Seoul 100-00, Korea
HP LPRA, Box 9A-175, Panama, Republic de Panama or Radio Club de Panama, Box 10745,Panama 4, Panama
HP3 Esteban D Mackay, HP3ML
HR1-HR4 Radio Club Tegucigalpa, Box 149-C, Tegucigalpa, DC, Honduras
HR2 QSL Bureau, Radio Club de Honduras, Box 273, San Pedro Sula, Cortes, Honduras
HR3-HR6 Via HR3JJR
HR5 Noe L Cruz, HR5NLC
HS RAST QSL Bureau, Box 2008, C/O GPO, Bangkok, Thailand
I,IW ARI, V Scarlatti 31, 20124 Milano, Italy
IC8 Cards for Capri Island via Box 18, 80073 Capri, Italy
IC8 Cards for Ischia Island via Box 41,80077 Ischia, Napoli, Italy
JA-JR JARL, Box 377, Tokyo, Japan
JT Radio Club JT1KAA, Box 639, Ulan Bator, Mongolia
JW-JX NRRL, Box 21, Refstad, Oslo 5, Norway
JY Royal Jordanian RAS, Box 2353, Amman, Jordan
KA FEARL (M), c/o Sam Fleming, GARH-ID-M-T USAR,APO San Francisco 96343
KA6-KR6 Radio Society of Okinawa, Box 653, APO San Francisco 96331
KC4US c/o COM NAV SUPP for Antarctica, Code 20/Communications, FPO San Francisco 96601
KG4 GARC, Box 12, FPO New York 09593
KG6 Mariana Islands, except Guam, send cards direct
KG6 Guam only, via Box 445, Agana, Guam, Mariana IS
KH6 John H Oka, KH6DQ
KL7 Alaska QSL Bureau, Star Route, Box 2401, Wasilla, Alaska 99687
KM6 KM6BI, Box 43, FPO San Francisco 96614
KP4 Radio Club de Puerto Rico, Box 1061, San Juan, Puerto Rico 00902
KS6 Larry Gandy, KS6DV
KV4 Graciano Belardo, KV4CF
KX6 Kwajalein Amateur Radio Club, KX6BU or Eniwetok ARC, KX6BQ
KZ5 QSL Manager, KZ50D
LA-LJ Norwegian Radio Relay Liga, Box 21, Refstad, Oslo 5, Norway
LU Radio Club Argentino, C C 97, Correo Central, Buenos Aires, CF, Argentina
LX Robert Schott, LX1DC
LZ Central QSL Bureau, Box 830, Sofia, Bulgaria
M1 Geom Mario Graziani, M1B
OA RCP, Radio Club of Peru, Box 538, Lima, Peru
OD5 RAL QSL Bureau, Box 8888, Beirut, Lebanon
OE OE, VSV QSL Bureau, Box 999, A-1014 Vienna, Austria
OH SRAL QSL Bureau, Box 306, SF-00101 Helsinki 10, Finland
OK-OL Central Radio Club, Box 69,11327 Praha 1, Czechoslovakia
ON UBA, Box 634,B-1000 Brussels 1, Belgium or UBRC, Box 224,B-1000 Brussels 1, Belgium
OR UBA, Box 634,B-1000 Brussels 1, Belgium
OX3-OZ EDR QSL Bureau, Ingstrup, DK-9480 Lokken, Denmark
OX4 OX4AA-ZZ via MARS Director, XP1AB, APO New York, 09121
OX5 OX5AA-ZZ via MARS Director, XP1AA, APO New York 09023
OY Foroyskir Radioamatorar, Box 184, DK-3800 Torshavn, Faeroe Is
PA-PI Dutch QSL Bureau, Box 400, Rotterdam 3005, Netherlands
PJ VERONA QSL Bureau, Box 383, Willemstad, Curacao, Netherlands Antilles
PJ Cards for Aruba only - Aruba Amateur Radio Club, Box 273, San Nicolas, Aruba, Netherlands Antilles
PT-PY LABRE/DF, Box 07-0004,70000 Brasilia, DF, Brasil
PZ VRAS,QSL Manager, Box 566, Paramaribo, Surinam
P29 QSL Bureau, Box 204, Port Moresby, Papua New Guinea
SJ-SM SSA, Ostmarksg 43,S-12342 Farsta, Sweden
SP PZK QSL Bureau, skrytka pocziowa 320,00950 Warszawa, Poland
SU QSL Bureau, Box 840, Cairo, Egypt
SV Mediterranean SV QSL Bureau, Box 564, Athens, Greece or via SV QSL Bureau, NARU, Box 1442, Athens 20, Greece
SV QSL Bureau, c/o SV WY, APO New York 09223
TA-TC Turk Radio Amatorleri Cemiyeti, Box 699, Karakoy, Istanbul, Turkey
TF IRA, Islenskir Radio Amatorar, Box 1058, Reykjavik, Iceland for American amateurs, Keflavik Amateur Radio Organization, Box 44, FPO New York 09571
TG CRAG, Box 115, Guatemala City, Guatemala
TI Radio Club of Costa Rica, Box 2412, San Jose, Costa Rica
TN8 QSL Bureau, Box 2239, Brazzaville, Republic of Congo
TU2 ARAI, Box 20036, Aridjan, Ivory Coast
U Central Radio Club, Box 88, Moscow, Russia
VE ARRL Central QSL Bureau of Canada, Box 396, Downsview, Ontario M3M 3A8, Canada
VE1 L J Fader, VE1FG
VE2 A G Daemen, VE2IJ
VE3 Ontario Trilliums, VE3TOT
VE4 D E Mc Vittie, VE4OX
VE5 A Lloyd Jones, VE5JI
VE6 D C Davidson, VE6TK
VE7 Howard Martin, VE7AFY
VE8 A Sturko, VE8NS
VK1 Canberra Radio Society, VK1ACA, c/o QSL Officer, Box 1173, Canberra City 2601, ACT, Australia
VK2 WIA Hunter Branch, QSL Officer, Box 134, Charlestown 2290, NSW, Australia
VK3 QSL Bureau, E Trebilcock, 340 Gillies St, Thornbury, Victoria 3071, Australia
VK4 QSL Officer, Box 638, GPO, Brisbane 4001, Queensland, Australia
VK5 QSL Bureau, c/o George Luxon, 203 Belair Rd, Torrens Park, South Australia 5062
VK6 QSL Bureau, c/o J Rumble, VK6RU, Box F319, GPO Perth, West Australia 6001
VK7 QSL Bureau, Box 371D, GPO, Hobart 7001, Tasmania, Australia
VK8 QSL Bureau, Box 1418, Darwin 5794, Northern Territory, Australia
VK9-SWL and unlisted calls only QSL Bureau, c/o R Jones, 23 Landale St, Box Hill, Victoria 3128, Australia
VO1 Bill Coffen, VO1KM
VO2 Goose Bay ARC, Box 232, Goose Bay, Labrador AOP 1CO, Canada
VP2A Antigua - Gerald Price, VP2AC
VP2D Dominica - Austin L Harris, VP2DAJ
VP2G Grenada - Fred W Pressey, VP2GBL
VP2L St Lucia - Timothy A James, VP2LT
VP2S St Vincent - via QSL Bureau, Box 142, St Vincent, Windward IS
VP8 Cards for Falkland Is & South Georgia should be sent direct. Cards for British Antartic Territory via RSGB, c/o Arthur Milne G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England
VP9 Radio Society Of Bermuda, Box 275, Hamilton, Bermuda
VQ9 VQ9 QSL Bureau, Box 191, Mahe, Seychelles
VS6 Cards for members only via Hong Kong Amateur Radio Transmitting Soc, Box 541, Hong Kong
VS9 RSGB, c/o Arthur Milne G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England
VU Amateur Radio Society of India, Box 534, New Delhi 1, India or via Calcutta ARL, 17 Woodlands, 8/7 Alipore Rd, Calcutta 700027, India
W1-K1 Foreign stations only via Hampden County A R Assn, Box 8160, Haledon, New Jersey 07508
W3-K3 Foreign stations only via Jesse Bieberman W3KT, RFD 1-Box 66, Malvern, Pa 19355
W4-W4 Foreign stations only via National Capitol DX Assn, Box DX, Boyce, Virginia 22620
WA4-WB4 Foreign stations only via Sterling Park ARC, Box 599, Sterling, Virginia 22170
W5-K5 Foreign stations only via ARRL W5 QSL Bureau, Box 1690, Sherman, Texas 75090
W6-K6 Foreign stations only via ARRL W6 QSL Bureau, 2814 Empire Av, Burbank, Calif 91504
W7-K7 Foreign stations only via Willamette Valley DX Club, Box 555, Portland, Oregon 97207
W8-K8 Foreign stations only via W8TO, Columbus A R Assn, Radio RM, 280 E Broad St, Columbus, Ohio 43215
W9-K9 Foreign stations only via Northern Illinois DX Assn, Box 519, Elmhurst, Illinois 60126
W-K Foreign stations only via AK-SAR-BEN RC Inc, Box 291, Omaha, Nebraska 68101
XE IARU-LMRE, Box 907, Mexico 1, DE, Mexico or via ARARM QSL Bureau, Av Hangares 418-#1, Mexico 7, DE, Mexico
XZ BARTS, c/o Zaw Yee XZ2SY, 9 Fifth Mile, Kaba Aye Pagoda Rd, Yankin, Post Office, Rangoon, Burma
YA Wolfgang Renner DK5AR
YB1 QSL Bureau, Box 314, Bandung, Indonesia
YB2 QSL Bureau-Central Java-Northern Area, Box 88, Semarang, Indonesia
YB2 QSL Bureau-Central Java-Southern Area, Box 73, Solo, Indonesia
YB3 QSL Bureau, Box 59, Surabaia, Indonesia
YB4 Johanes Titaley, YB4GA
YB6 QSL Bureau, Box 464, Medan, Indonesia
YB7 ORARI QSL Bureau, Box 2761, Jakarta, Indonesia
YK QSL Bureau, Box 35, Damascus, Syria
YN Mike Murciano YN1MO/W4, Box 340902, Coral Gables, Florida 33134
YO The Central Radio Club, Box 1395, Bucuresti 5, Romania
YS Members only - CRAS, Box 517, San Salvador, El Salvador
YU SRJ, Box 48, 11001 Belgrade, Yugoslavia
YU1 SRS, Box 64, 11001 Belgrade, Yugoslavia
YU2 SRH, Dalmatinska 12,41000 Zagreb, Yugoslavia
YU3 ZRS, Box 180, 61001 Ljubljana, Yugoslavia
YU4 SR BIH, Box 61,71001 Sarajevo, Yugoslavia
YU5 SRM, Box 14,91001 Skopje, Yugoslavia
YV IARU Bureau, Radio Club Venezolana, Box 2285, Caracas, DE, Venezuela or ARV QSL Bureau, Box 3636, Caracas, DE, Venezuela
ZB2 Gibraltar ARS, Box 292, Gibraltar
ZD7 W R Stevens, ZD7SD
ZD8 Ascension Amateur Radio League, ZD8AR
ZD9 RSGB, c/o Arthur Milne G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England
ZE RSR QSL Manager, Box 2377, Salisbury, Rhodesia
ZF1 Cards may be sent direct
ZK1 QSL Bureau, Radio Station Rarotonga, Rarotonga, Cook Is
ZL NZART, Box 40-212, Upper Hutt, New Zealand
ZP Radio Club Paraguayo, Casilla de Correo 512, Asuncion, Paraguay
ZR-ZS For members only - SARL, Box 3037, Capetown 8000, Cape Province, South Africa
3A2 Pierre Anderhalt, 3A2CN or Director Generale Des Telecoms, 16 Blvd De Suisse, Monte Carlo, Monaco
3B6-9 Paul Caboche, 3B8AD
3D2 QSL Bureau, Box 184, Suva, Fiji
3D6 Radio Society of Swaziland, Box 21, Ezulwini, Swaziland
4S7 Radio Society of Sri Lanka, QSL Manager, Box 907, Colombo, Sri Lanka
4X4-4Z4 Shalom Bacalu, IARC QSL Bureau Manager, Box 65, Herzlia 46100, Israel
5A QSL Bureau, Box 372, Tripoli, Libya
5B4,ZC4 Cyprus Amateur Radio Society, Box 1267, Limassol, Cyprus
5H3 RSGB, c/o Arthur Milne G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England
5N2 Nigerian Amateur Radio Society, Box 2873, Lagos, Nigeria
5V via Box 33, Atakpame, Togo
5W1 Western Samoa RC,QSL Bureau-Secretary, Box 1069, Apia, Western Samoa
5Z4 RSEA QSL Bureau, Box 45681, Nairobi, Kenya
60 Via Box 397, Mogadiscio, Somali Republic
6W8 REF or ARAS, Box 971, Dakar, Senegal
6Y5 Jamaica Amateur Radio Assn, Jamaica Red Cross, 76 Arnold St, Kingston 5, Jamaica, West Indies
7G1 Central Radio Club, Box 69,11327 Praha 1, Czechoslovakia
7Q7 H Y Bvumbwe, 7Q7AE
7X ARA QSL Service, Box 2, Alger, Algeria
8P6 Radio Society of Barbados, Box 814E, Bridgetown, Barbados, Windward Is
8Q6 Radio Society of Sri Lanka, Box 907, Colombo, Sri Lanka
8R1 Ivan Gouveia, 8R1AG
9G1 Cards for members only, Ghana Amateur Radio Society, Box 3773, Accra, Ghana
9H1-5 MARL, Box 575, Valletta, Malta
9H4 Eric Rogers, 9H4G
9I-9J Radio Society of Zambia, Box 332, Kitwe, Zambia
9K2 Nasir H Khan, 9K2AN
9L1 Sierra Leone ARS,9L1SL, Box 16, Freetown, Sierra Leone or via RSGB, c/o Arthur Milne G2MI, 29 Kechill Gardens, Hayes, Bromley, Kent BR2 7NH, England
9M2,6,8 MARTS, Box 777, Kuala Lumpur, Malaysia
9Q5 UZAR,QSL Bureau, Box 1459, Kinshasa, Republic of Zaire
9V1 SARTS, Box 2728, Republic of Singapore 1
9X5 RAR QSL Bureau, Box 663, Kigali, Republic of Rwanda
9Y4 Trinidad & Tobago Amateur Radio Society, Box 1167, Port-of-Spain, Trinidad

# CENSUS OF AMATEUR RADIO LICENSES* in the U.S.A.

by classes, within states and call areas

| Call Area | State | Novice | Tech-nician | Con-ditional | General | Advanced | Extra | Club | Military | Repeaters | State totals | YL's (Included in state totals) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #1 | Conn. | 502 | 814 | 531 | 1,475 | 1,148 | 358 | 103 | 6 | 58 | 4,995 | 210 |
| | Maine | 147 | 165 | 388 | 393 | 368 | 102 | 17 | 5 | 21 | 1,606 | 86 |
| | Mass. | 781 | 2,643 | 384 | 3,195 | 2,238 | 589 | 138 | 16 | 96 | 10,080 | 473 |
| | N.H. | 123 | 438 | 155 | 524 | 416 | 91 | 20 | 2 | 19 | 1,788 | 121 |
| | R.I. | 63 | 466 | 73 | 443 | 268 | 66 | 24 | 6 | 15 | 1,424 | 69 |
| | Vermont | 74 | 107 | 152 | 183 | 174 | 44 | 13 | 0 | 6 | 753 | 45 |
| | | 1,690 | 4,633 | 1,683 | 6,213 | 4,612 | 1,250 | 315 | 35 | 215 | 20,646 | 1,004 |
| #2 | N.J. | 870 | 2,985 | 258 | 3,741 | 2,858 | 790 | 255 | 5 | 101 | 11,863 | 426 |
| | N.Y. | 2,154 | 5,014 | 558 | 6,763 | 5,259 | 1,304 | 332 | 21 | 227 | 21,632 | 922 |
| | | 3,024 | 7,999 | 816 | 10,504 | 8,117 | 2,094 | 587 | 26 | 328 | 33,495 | 1,348 |
| #3 | Delaware | 73 | 147 | 34 | 229 | 157 | 51 | 11 | 3 | 9 | 714 | 28 |
| | D.C. | 32 | 37 | 18 | 130 | 115 | 49 | 14 | 5 | 2 | 402 | 10 |
| | Md. | 623 | 952 | 212 | 1,734 | 1,657 | 475 | 85 | 14 | 51 | 5,803 | 224 |
| | Pa. | 1,407 | 3,269 | 534 | 4,607 | 3,311 | 851 | 203 | 24 | 144 | 14,350 | 621 |
| | | 2,135 | 4,405 | 798 | 6,700 | 5,240 | 1,426 | 313 | 46 | 206 | 21,269 | 883 |
| #4 | Alabama | 565 | 941 | 481 | 1,068 | 862 | 192 | 35 | 14 | 66 | 4,224 | 286 |
| | Florida | 1,341 | 2,686 | 1,431 | 4,022 | 3,638 | 812 | 113 | 15 | 140 | 14,198 | 801 |
| | Georgia | 603 | 877 | 605 | 1,284 | 1,044 | 265 | 51 | 8 | 60 | 4,797 | 246 |
| | Ky. | 541 | 735 | 370 | 743 | 614 | 138 | 32 | 4 | 50 | 3,227 | 205 |
| | N.C. | 689 | 853 | 689 | 1,369 | 1,257 | 246 | 58 | 8 | 76 | 5,245 | 279 |
| | S.C. | 272 | 321 | 659 | 494 | 451 | 126 | 46 | 9 | 26 | 2,404 | 125 |
| | Tenn. | 740 | 1,390 | 472 | 1,284 | 1,197 | 256 | 52 | 5 | 76 | 5,472 | 306 |
| | Va. | 607 | 956 | 581 | 1,804 | 1,692 | 524 | 50 | 24 | 50 | 6,288 | 229 |
| | | 5,358 | 8,759 | 5,288 | 12,068 | 10,755 | 2,559 | 437 | 87 | 544 | 45,855 | 2,477 |
| #5 | Ark. | 280 | 462 | 300 | 521 | 507 | 121 | 34 | 3 | 34 | 2,262 | 154 |
| | La. | 402 | 612 | 476 | 930 | 819 | 170 | 48 | 11 | 35 | 3,503 | 197 |
| | Miss. | 253 | 333 | 289 | 428 | 416 | 64 | 9 | 4 | 33 | 1,829 | 100 |
| | N.M. | 144 | 256 | 395 | 356 | 469 | 134 | 14 | 6 | 27 | 1,801 | 94 |
| | Okla. | 412 | 795 | 336 | 857 | 902 | 164 | 39 | 9 | 40 | 3,554 | 224 |
| | Texas | 1,817 | 3,241 | 2,165 | 4,178 | 4,087 | 854 | 153 | 22 | 221 | 16,738 | 1,077 |
| | | 3,308 | 5,699 | 3,961 | 7,270 | 7,200 | 1,507 | 297 | 55 | 390 | 29,687 | 1,846 |
| #6 | Calif. | 3,137 | 9,121 | 2,698 | 11,816 | 11,561 | 2,417 | 533 | 59 | 489 | 41,831 | 2,077 |
| #7 | Arizona | 329 | 876 | 483 | 1,097 | 1,284 | 259 | 43 | 5 | 45 | 4,421 | 254 |
| | Idaho | 179 | 134 | 343 | 192 | 268 | 62 | 13 | 0 | 10 | 1,201 | 75 |
| | Montana | 123 | 57 | 406 | 164 | 242 | 59 | 17 | 0 | 11 | 1,079 | 62 |
| | Nevada | 66 | 179 | 315 | 227 | 259 | 68 | 20 | 2 | 19 | 1,155 | 76 |
| | Oregon | 511 | 615 | 679 | 1,366 | 1,184 | 248 | 55 | 6 | 35 | 4,699 | 278 |
| | Utah | 200 | 312 | 141 | 389 | 414 | 88 | 23 | 6 | 27 | 1,600 | 91 |
| | Wash. | 730 | 1,149 | 943 | 2,170 | 2,058 | 489 | 78 | 16 | 87 | 7,720 | 492 |
| | Wyoming | 56 | 59 | 190 | 101 | 113 | 31 | 12 | 1 | 12 | 575 | 34 |
| | | 2,194 | 3,381 | 3,500 | 5,706 | 5,822 | 1,304 | 261 | 36 | 246 | 22,450 | 1,362 |
| #8 | Mich. | 1,323 | 2,479 | 727 | 3,400 | 2,556 | 446 | 120 | 12 | 92 | 11,155 | 541 |
| | Ohio | 1,938 | 4,990 | 481 | 4,747 | 3,385 | 639 | 206 | 10 | 164 | 16,560 | 860 |
| | W.Va. | 319 | 404 | 130 | 534 | 378 | 93 | 19 | 4 | 25 | 1,906 | 103 |
| | | 3,580 | 7,873 | 1,338 | 8,681 | 6,319 | 1,178 | 345 | 26 | 281 | 29,621 | 1,504 |
| #9 | Illinois | 1,581 | 3,442 | 1,127 | 4,197 | 3,277 | 632 | 248 | 10 | 102 | 14,616 | 694 |
| | Indiana | 853 | 1,949 | 365 | 1,933 | 1,481 | 302 | 115 | 5 | 62 | 7,065 | 372 |
| | Wisconsin | 658 | 853 | 603 | 1,484 | 1,278 | 245 | 74 | 10 | 46 | 5,251 | 209 |
| | | 3,092 | 6,244 | 2,095 | 7,614 | 6,036 | 1,179 | 437 | 25 | 210 | 26,932 | 1,275 |
| #10 | Colo. | 458 | 690 | 543 | 1,197 | 1,076 | 234 | 43 | 12 | 69 | 4,322 | 240 |
| | Iowa | 517 | 565 | 386 | 1,259 | 1,105 | 175 | 76 | 4 | 54 | 4,142 | 210 |
| | Kansas | 481 | 469 | 606 | 927 | 817 | 183 | 41 | 8 | 51 | 3,583 | 218 |
| | Minn. | 671 | 612 | 656 | 1,462 | 1,317 | 326 | 86 | 3 | 51 | 5,184 | 198 |
| | Mo. | 879 | 1,063 | 623 | 1,677 | 1,481 | 333 | 95 | 7 | 67 | 6,225 | 325 |
| | Nebr. | 307 | 345 | 361 | 613 | 566 | 78 | 34 | 3 | 30 | 2,337 | 128 |
| | N.D. | 80 | 26 | 369 | 89 | 134 | 26 | 10 | 1 | 7 | 742 | 43 |
| | S.D. | 121 | 84 | 184 | 210 | 213 | 46 | 15 | 2 | 15 | 890 | 70 |
| | | 3,514 | 3,854 | 3,728 | 7,434 | 6,709 | 1,402 | 400 | 40 | 344 | 27,425 | 1,432 |
| KH6 | Hawaii | 107 | 147 | 179 | 368 | 458 | 84 | 17 | 18 | 14 | 1,392 | 60 |
| KL7 | Alaska | 143 | 103 | 123 | 323 | 315 | 83 | 6 | 36 | 12 | 1,144 | 91 |
| Grand total 50 states and D.C. only | | 31,282 | 62,218 | 26,207 | 84,697 | 73,144 | 16,483 | 3,948 | 489 | 3,279 | 301,747 | 15,359 |

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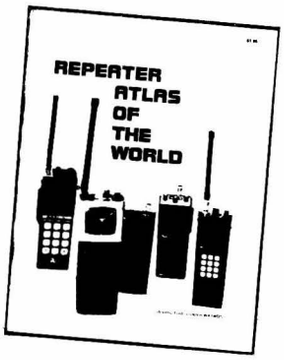


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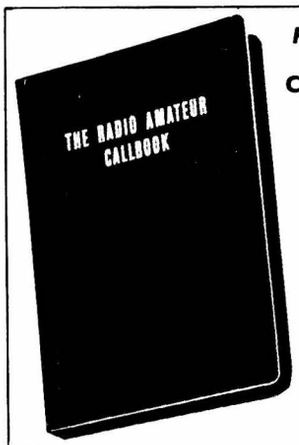


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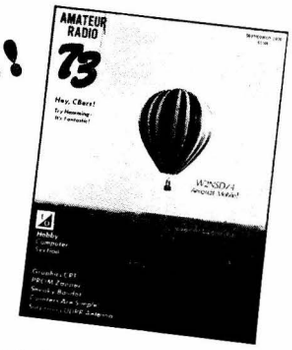


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# INTERNATIONAL "Q" SIGNALS

| Abbreviation | Question | Answer or Advice |
|---|---|---|
| QRA | What is the name of your station? | The name of my stations is . . . |
| QRB | How far approximately are you from my station? | The approximate distance between our stations is . . . nautical miles (or kilometres) |
| QRD | Where are you bound and where are you from? | I am bound for . . . from . . . |
| QRG | Will you tell me my exact frequency or that of . . .)? | Your exact frequency (or that of . . . is . . . kc/s (or Mc/s). |
| QRH | Does my frequency vary? | Your frequency varies. |
| QRI | How is the tone of my transmission? | The tone of your transmission is . . .<br>(1. Good;<br>2. Variable;<br>3. Bad). |
| QRK | What is the readability of my signals (or those of . . .)? | The readability of your signals (or those of . . .) is . . .<br>(1. Unreadable;<br>2. Readable now and then;<br>3. Readable, but with difficulty;<br>4. Readable;<br>5. Perfectly readable). |
| QRL | Are you busy? | I am busy (or I am busy with . . .). Please do not interfere. |
| QRM | Are you being interferred with? | I am being interferred with. |
| QRN | Are you troubled by static? | I am troubled by static. |
| QRO | Shall I increase power? | Increase power. |
| QRP | Shall I decrease power? | Decrease power. |
| QRQ | Shall I send faster? | Send faster (. . . words per minute). |
| QRR | Are you ready for automatic operation? | I am ready for automatic operation. Send at . . . words per minute. |
| QRS | Shall I send more slowly? | Send more slowly (. . . words per minute). |
| QRT | Shall I stop sending? | Stop sending. |
| QRU | Have you anything for me? | I have nothing for you. |
| QRV | Are you ready? | I am ready. |
| QRW | Shall I inform . . . that you are calling him on . . . kc/s (or Mc/s). | Please inform . . . that I am calling him on . . . kc/s (or Mc/s). |
| QRX | When will you call me again? | I will call you again at . . . hours [on . . . kc/s (or Mc/s)]. |
| QRY | What is my turn? | Your turn is Number . . . (Relates to communication.) |
| QRZ | Who is calling me? | You are being called by . . . [on . . . kc/s or Mc/s)]. |
| QSA | What is the strength of my signals (or those of . . .)? | The strength of your signals (or those of . . .) is . . .<br>(1. Scarcely perceptible;<br>2. Weak;<br>3. Fairly good;<br>4. Good;<br>5. Very good). |
| QSB | Are my signals fading? | Your signals are fading. |
| QSD | Is my keying defective? | Your keying is defective. |
| QSG | Shall I send . . . telegrams at a time? | Send . . . telegrams at a time. |
| QSJ | What is the charge to be collected per word to . . . including your internal telegraph charge? | The charge to be collected per word to . . . including my internal telegraph charge is . . . francs. |
| QSK | Can you hear me between your signals? | I can hear you between my signals. |
| QSL | Can you acknowledge receipt? | I am acknowledging receipt. |
| QSM | Shall I repeat the last telegram which I sent you, or some previous telegram? | Repeat the last telegram which you sent me [or telegram(s) number(s) . . .]. |
| QSN | Did you hear me [or . . . (call sign)] on . . . kc/s (or Mc/s)? | I did hear you [or . . . (call sign) on . . . kc/s (or Mc/s). |
| QSO | Can you communicate with . . . direct or by relay? | I can communicate with . . . direct (or by relay through . . .). |
| QSP | Will you relay to . . . free of charge? | I will relay to . . . free of charge. |
| QSQ | Have you a doctor on board [or is . . . (name of person) on board]? | I have a doctor on board [or . . . name of person) is on board]. |
| QSU | Shall I send or reply on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .)? | Send or reply on this frequency [or on . . . kc/s (or Mc/s] (with emissions of closs . . .). |
| QSV | Shall I send a series of V's on this frequency [or . . . kc/s (or Mc/s)]? | Send a series of V's on this frequency [or . . . kc/s (or Mc/s)]. |
| QSW | Will you send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class)? | I am going to send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .). |
| QSX | Will you listen to . . . [call sign(s)] on . . . kc/s (or Mc/s) | I am listening to . . . [call sign(s)] on . . . kc/s (or Mc/s). |
| QSY | Shall I change to transmission on another frequency? | Change to transmission on another frequency [or on . . . kc/s (or Mc/s)]. |
| QSZ | Shall I send each word or group more than once? | Send each word or group twice (or . . . times). |
| QTA | Shall I cancel telegram number . . . as if it had not been sent? | Cancel telegram number . . . as if it had not been sent. |
| QTB | Do you agree with my counting of words? | I do not agree with your counting of words; I will repeat the first letter or digit of each word or group. |
| QTC | How many telegrams have you to send? | I have . . . telegrams for you (or for . . . ). |
| QTE | What is my TRUE bearing from you?<br>or<br>What is my TRUE bearing from . . . (call sign)?<br>or<br>What is the TRUE bearing of . . . (call sign) from . . . (call sign)? | Your TRUE bearing from me is . . . degrees (at . . . hours)<br>or<br>Your TRUE bearing from . . . (call sign) was . . . degrees (at . . . . . hours)<br>or<br>The TRUE bearing of . . . (call sign) from . . . (call sign) was . . . degrees at . . . hours). |
| QTG | Will you send two dashes of ten seconds each followed by your call sign (repeated . . . times) [on . . . kc/s (or Mc/s)]?<br>or<br>Will you request . . . to send two dashes of ten seconds followed by his call sign (repeated . . . times) on . . . kc/s (or Mc/s)? | I am going to send two dashes of ten seconds each followed by my call sign (repeated . . . times) [on . . . kc/s (or Mc/)]<br>or<br>I have requested . . . to send two dashes of ten seconds followed by his call sign (repeated . . . times) on . . . kc/s (or Mc/s). |
| QTH | What is your position in latitude and longitude (or according to any other indication)? | My position is . . . latitude . . . longitude (or according to any other indication). |
| QTI | What is your TRUE track? | My TRUE track is . . . degrees. |
| QTJ | What is your speed? | My speed is . . . knots (or kilometres per hour). |
| QTL | What is your TRUE heading? | My TRUE heading is . . . degrees. |
| QTN | At what time did you depart from . . . (place)? | I departed from . . . (place) at . . . hours. |
| QTO | Have you left dock (or port)?<br>or<br>Are you airborne? | I have left dock (or port)<br>or<br>I am airborne. |
| QTP | Are you going to enter dock (or port)?<br>or<br>Are you going to alight (or land)? | I am going to enter dock (or port)<br>or<br>I am going to alight (or land). |
| QTQ | Can you communicate with my station by means of the International Code of Signals? | I am going to communicate with your station by means of the International Code of Signals. |
| QTR | What is the correct time? | The correct time is . . . hours. |
| QTS | Will you send your call sign for . . . minute(s) now (or at . . . hours) [on . . . kc/s (or Mc/s] so that your frequency may be measured? | I will send my call sign for . . . minute(s) now (or at . . . hours) [on . . . kc/s (or Mc/s)] so that my frequency may be measured. |
| QTU | What are the hours during which your station is open? | My station is open from . . . to . . . hours. |
| QTV | Shall I stand guard for you on the frequency of . . . kc/s (or Mc/s) (from . . . to . . . hours)? | Stand guard for me on the frequency of . . . kc/s (or Mc/s) (from . . . to . . . hours). |
| QTX | Will you keep your station open for further communication with me until further notice (or until . . . hours)? | I will keep my station open for further communication with you until further notice (or until . . . hours). |
| QUA | Have you news of . . . (call sign)? | Here is news of . . . (call sign). |
| QUB | Can you give me, in the following order, information concerning: visibility, height of clouds, direction and velocity of ground wind at . . . (place of observation)? | Here is the information requested . . . |
| QUC | What is the number (or other indication) of the last message you received from me [or from (call sign]? | The number (or other indication) of the last message I received from you [or from . . . (call sign)] is . . . |
| QUD | Have you received the urgency signal sent by . . . (call sign of mobile station)? | I have received the urgency signal sent by . . . (call sign of mobile station) at . . . hours). |
| QUF | Have you received the distress signal sent by . . . (call sign of mobile station)? | I have received the distress signal sent by . . . (call sign of mobile station) at . . . hours. |
| QUG | Will you be forced to alight (or land)? | I am forced to alight (or land immediately.<br>or<br>I shall be forced to alight (or land) at . . . (position or place). |
| QUH | Will you give me the present barometric pressure at sea level? | The present barometric pressure at sea level is . . . (units). |

# MAP OF THE WORLD

## PREFIXES-BY COUNTRIES

The following countries listed in alphabetical order by country show international radio amateur prefixes Characters in ( ) designate the continent and zone in which the country is located. Abbreviations are as follows: A—Asia, AF—Africa, E—Europe, NA—North America, O—Oceania, SA—South America.

| Country | Zone | Prefix |
|---|---|---|
| Afghanistan | (A-21) | YA |
| Agalega Is. | (AF-39) | 3B6 |
| Aland Is. | (E-15) | OHØ |
| Alaska | (NA-1) | KL7 |
| Albania | (E-15) | ZA |
| Algeria | (AF-33) | 7X |
| Amsterdam & St. Paul Is. | (AF-39) | FB8Z |
| Andaman & Nicobar Is. | (A-26) | VU2 |
| Andorra | (E-14) | C31 |
| Angola | (AF-36) | CR6 |
| Antarctica | | CE9AA-AM, FB8Y, KC4, LA, LU-Z, UA1, VKØ, VP8, ZL5, 3Y, 8J |
| Argentina | (SA-13) | LU |
| Ascension Is. | (AF-36) | ZD8 |
| Auckland & Campbell Is. | (O-32) | ZL |
| Australia | (O-29 & 30) | VK |
| Austria | (E-15) | OE |
| Aves Is. | (NA-8) | YVØ |
| Azores Is. | (E-14) | CT2 |
| Bahama Is. | (NA-8) | VP7 |
| Bahrain Is. | (A-21) | A9X |
| Baja Nuevo Is. | (NA-7) | HKØ |
| Baker Is. | (O-31) | KB6 |
| Balearic Is. | (E-14) | EA6 |
| Bangladesh | (A-22) | S2, S3 |
| Barbados Is. | (NA-8) | 8P6 |
| Belgium | (E-14) | ON |
| Belize (British Honduras) | (NA-7) | VP1 |
| Bermuda Is. | (NA-5) | VP9 |
| Bhutan | (A-22) | A51 |
| Bolivia | (SA-10) | CP |
| Botswana | (AF-38) | A2C |
| Bouvet Is. | (AF-38) | 3Y |
| Brazil | (SA-11) | PT, PY |
| British Phoenix Is. | (O-31) | VR1 |
| Brunei | (O-28) | VS5 |
| Bulgaria | (E-20) | LZ |
| Burma | (A-26) | XZ |
| Burundi | (AF-36) | 9U5 |
| Cambodia/Khmer Rep. | (A-26) | XU |
| Cameroon | (AF-36) | TJ |
| Canada | (NA-1 to 5) | VE |
| Canal Zone | (NA-7) | KZ5 |
| Canary Is. | (AF-33) | EA8 |
| Canton Is. | (O-31) | KB6 |
| Cape Verde Is. | (AF-35) | CR4 |
| Capri Is. | (E-15) | IC |
| Caroline Is. | (O-27) | KC6 |
| Cayman Is. | (NA-8) | ZF1 |
| Central African Republic | (AF-36) | TL8 |
| Ceuta y Melilla, Spanish | (A-33) | EA9 |
| Ceylon (Rep. of Sri Lanka) | (A-22) | 4S7 |
| Chad Republic | (AF-36) | TT8 |
| Chagos Is. | (AF-39) | VQ9 |
| Channel Is. | (E-14) | GC |
| Chatham Is. | (O-32) | ZL |
| Chile | (SA-12) | CE |
| China | (A-23 & 24) | BY |
| Christmas Is. | (O-29) | VK9X |
| Clipperton Is. | (NA-7) | FO8 |
| Cocos Is. | (NA-7) | TI9 |
| Cocos (Keeling) Is. | (O-29) | VK9Y |
| Colombia | (SA-9) | HK |
| Comoro Is. | (AF-39) | FH8 |
| Congo, Republic of | (AF-36) | TN8 |
| Cook Is. | (O-32) | ZK1 |
| Corsica | (E-15) | FC |
| Costa Rica | (NA-7) | TI |
| Crete, Greece | (E-20) | SV |
| Crozet Is. | (AF-39) | FB8W |
| Cuba | (NA-8) | CM, CO |
| Cyprus | (A-20) | ZC4, 5B4 |
| Czechoslovakia | (E-15) | OK, OL |
| Dahomey, Republic of | (AF-35) | TY |
| Denmark | (E-14) | OZ |
| Dodecanese Is. | (E-20) | SV5 |
| Dominican Republic | (NA-8) | HI |
| Easter Is. | (SA-12) | CEØA |
| Ecuador | (SA-10) | HC |
| Egypt (United Arab Rep.) | (AF-34) | SU |
| El Salvador | (NA-7) | YS |
| Enderbury Is. | (O-31) | KB6 |
| England | (E-14) | G |
| Ethiopia | (AF-37) | ET3 |
| Faeroes Is. | (E-14) | OY |
| Falkland Is. | (SA-13) | VP8 |
| Fernando de Noronha | (SA-11) | PYØ |
| Fiji Is. | (O-32) | 3D2 |
| Finland | (E-15) | OH |
| France | (E-14) | F |
| French Polynesia | (O-32) | FO8 |
| Gabon Republic | (AF-36) | TR8 |
| Galapagos Is. | (SA-10) | HC8 |
| Gambia | (AF-35) | ZD3 |
| Germany, Federal Rep. of | (E-14) | DA, B, C, F, J, K, L |
| German Dem. Rep. East | (E-14) | DM |
| Ghana | (AF-35) | 9G1 |
| Gibraltar | (E-14) | ZB2 |
| Gilbert, Ellice & Ocean Is. | (O-31) | VR1 |
| Glorioso Is. | (AF-39) | FR7 |
| Gozo (Malta) | (E-15) | 9H4 |
| Graham Land | (SA-13) | VP8, LU-Z |
| Greece | (E-20) | SV |
| Greenland | (NA-40) | OX |
| Guadeloupe | (NA-8) | FG7 |
| Guam Is. | (O-27) | KG6 |
| Guantanamo Bay | (NA-8) | KG4 |
| Guatemala | (NA-7) | TG |
| Guiana, French | (SA-9) | FY7 |
| Guinea, Equatorial | (AF-36) | 3C |
| Guinea, Portuguese | (AF-35) | CR3 |
| Guinea, Republic of | (AF-35) | 3X |
| Guyana | (SA-9) | 8R |
| Haiti | (NA-8) | HH |
| Hawaii | (O-31) | KH6 |
| Heard Is. | (O-39) | VKØ |
| Honduras | (NA-7) | HR |
| Hong Kong | (A-24) | VS6 |
| Howland Is. | (O-31) | KB6 |
| Hungary | (E-15) | HA, HG |
| Iceland | (E-40) | TF |
| India | (A-22) | VU2 |
| Indonesia | (O-28) | YB, YC, YD |
| Iran | (A-21) | EP |
| Iraq | (A-21) | YI |
| Ireland | (E-14) | EI |
| Isle of Man | (E-14) | GD |
| Israel | (A-20) | 4X4, 4Z4 |
| Italy | (E-15) | I, IW |
| Ivory Coast | (AF-35) | TU2 |
| Jamaica | (NA-8) | 6Y5 |
| Jan Mayen Is. | (E-40) | JX |
| Japan | (A-25) | JA, JE, JF, JG, JH, JR |
| Jarvis Is. | (O-31) | KP6 |
| Johnston Is. | (O-31) | KJ6 |
| Jordan | (A-20) | JY |
| Juan de Nova Is. | (AF-39) | FR7 |
| Juan Fernandez Is. | (SA-12) | CEØZ |
| Kamaran Is. | (A-21) | VS9K |
| Kenya | (AF-37) | 5Z4 |
| Kerguelen Is. | (AF-39) | FB8X |
| Kermadec Is. | (O-32) | ZL |
| Korea | (A-25) | HM, HL9 |
| Kure Is. | (O-31) | KH6 |
| Kuwait | (A-21) | 9K2 |
| Labrador | (NA-2) | VO2 |
| Laccadive Is. | (A-22) | VU2 |
| Lampedusa Is. | (E-15) | IG9 |
| Laos | (A-26) | XW8 |
| Lebanon | (A-20) | OD5 |
| Leeward Is. | | |
| Anguilla | (NA-8) | VP2E |
| Antigua, Barbuda | (NA-8) | VP2A |
| British Virgin Is. | (NA-8) | VP2V |
| Montserrat | (NA-8) | VP2M |
| St. Kitts, Nevis | (NA-8) | VP2K |
| Lesotho | (AF-38) | 7P8 |
| Liberia | (AF-35) | EL, 5L |
| Libyan Arab Republic | (AF-34) | 5A |
| Liechtenstein | (E-14) | HBØ |
| Line Is., Northern | (O-31) | VR3 |
| Line Is., Central & Southern | (O-31) | VR7 |
| Lord Howe Is. | (O-30) | VK2 |
| Luxembourg | (E-14) | LX |
| Macao | (A-24) | CR9 |
| Macquarie Is. | (O-30) | VKØ |
| Madeira Is. | (AF-33) | CT3 |
| Malagasy Republic | (AF-39) | 5R8 |
| Malawi | (AF-37) | 7Q7 |
| Malaysia, East | (A-28) | 9M6, 8 |
| Malaysia, West | (A-28) | 9M2 |
| Maldive Is. | (A-22) | 8Q6, VS9 |
| Mali Republic | (AF-35) | TZ |
| Malpelo Is. | (SA-9) | HKØ |
| Malta | (E-15) | 9H1, 5 |
| Manihiki Is. | (O-31) | ZK1 |
| Mariana Is. | (O-27) | KG6 |
| Market Reef | (E-15) | OJØ, OHØM |
| Marshall Is. | (O-31) | KX6 |
| Martinique | (NA-8) | FM7 |
| Mauritania | (AF-35) | 5T5 |
| Mauritius Is. | (AF-39) | 3B8 |
| Mexico | (NA-6) | XE, XF |
| Midway Is. | (O-31) | KM6 |
| Minami-Tori-Shima Is. | (O-27) | JD1 |
| Monaco | (E-14) | 3A |
| Mongolia | (A-23) | JT1 |
| Morocco | (AF-33) | CN |
| Mozambique | (AF-37) | CR7 |
| Nauru, Republic of | (O-31) | C21 |
| Navassa Is. | (NA-8) | KC4 |
| Nepal | (A-22) | 9N1 |
| Netherlands | (E-14) | PA, PE, PI |
| Netherlands Antilles | (NA-8 & SA-9) | PJ |
| New Caledonia | (O-32) | FK8 |
| Newfoundland | (NA-5) | VO1 |
| New Hebrides | (O-32) | FU8, YJ |
| New Zealand | (O-32) | ZL |
| Nicaragua | (NA-7) | YN |
| Niger | (AF-35) | 5U7 |
| Nigeria | (AF-35) | 5N2 |
| Niue Is. | (O-32) | ZK2 |
| Norfolk Is. | (O-32) | VK9 |
| Northern Ireland | (E-14) | GI |
| North Vietnam | (A-26) | 3W8 |
| Norway | (E-14) | LA, LB, LF, LG, LJ |
| Ogasawara Is. | (A-25) | JD1 |
| Okinawa (Ryukyu Is.) | (A-25) | JR6 |
| Oman, Sultanate of | (A-21) | A4X |
| Pakistan | (A-21) | AP |
| Palmyra Is. | (O-31) | KP6 |
| Panama | (NA-7) | HP |
| Pantelleria Is. | (AF-33) | IH |
| Papua New Guinea | (O-28) | P29 |
| Paraguay | (SA-11) | ZP |
| Peru | (SA-10) | OA |
| Philippines | (O-27) | DU |
| Phoenix Is. | (O-31) | KB6 |
| Pianosa Is. | (E-14) | IA |
| Pitcairn Is. | (O-32) | VR6 |
| Poland | (E-15) | SP |
| Portugal | (E-14) | CT1 |
| Prince Edward & Marion Is. | (AF-38) | ZS2 |
| Principe & Sao Tome Is. | (AF-36) | CR5 |
| Puerto Rico | (NA-8) | KP4 |
| Qatar | (A-21) | A7X |
| Reunion Is. | (AF-39) | FR7 |
| Revilla Gigedo Is. | (NA-6) | XE4 |
| Rhodesia | (AF-38) | ZE |
| Rodriguez Is. | (AF-39) | 3B9 |
| Romania | (E-20) | YO |
| Rota | (O-27) | KG6R |
| Rwanda | (AF-36) | 9X |
| Ryukyu Is. (Okinawa) | (A-25) | JR6 |
| Sabah | (O-28) | 9M6 |
| St. Brandon Is. | (AF-39) | 3B7 |
| Saint Helena Is. | (AF-36) | ZD7 |
| Saint Martin Is. | (NA-8) | FS7 |
| St. Peter & St. Paul's Rocks | (SA-11) | PYØ |
| Saint Pierre & Miquelon Is. | (NA-5) | FP8 |
| Saipan | (O-27) | KG6S |
| Samoa, American | (O-32) | KS6 |
| Samoa, Western | (O-32) | 5W1 |
| San Andres & Providencia | (NA-7) | HKØ |
| San Felix Is. | (SA-12) | CEØX |
| San Marino | (E-15) | M1 |
| Sao Tome & Principe Is. | (A-36) | CR5 |
| Sarawak | (O-28) | 9M8 |
| Sardinia | (E-15) | IS |
| Saudi Arabia | (A-21) | HZ, 7Z |
| Saudi Arabia/Iraq Neutral Zone | (A-21) | 8Z4 |
| Scotland | (E-14) | GM |
| Senegal Republic | (AF-35) | 6W8 |
| Serrana Bk & Roncador Cay | (NA-7) | HKØ |
| Seychelles Is. | (AF-39) | VQ9 |
| Sicily | (E-15) | IT |
| Sierra Leone | (AF-35) | 9L1 |
| Sikkim | (A-22) | AC3 |
| Singapore, Rep. of | (A-28) | 9V1 |
| Solomon Is. | (O-28) | VR4 |
| Somali Republic | (AF-37) | 6O |
| Somaliland, French | (AF-37) | FL8 |
| South Africa, Rep. of | (AF-38) | ZS1, 2, 4-6 |
| South Georgia Is. | (SA-13) | VP8 |
| South Orkney Is. | (SA-13) | VP8 |
| South Sandwich Is. | (SA-13) | VP8 |
| S. Shetland Is. | (SA-13) | CE9AN-AZ, VP8 |
| South Vietnam | (A-26) | XV5 |
| Southwest Africa | (AF-38) | ZS3 |
| South Yemen | (A-21) | 7O |
| Soviet Union: | | |
| European Russian Soviet Federated Socialist Republic | (E-16) | UA1, 2, 3, 4, 6 |
| Asiatic Russian S.F.S.R. | (A-18, 19) | UA9, Ø |
| Armenian S.S.R. | (A-21) | UG6 |
| Azerbaidzhan S.S.R. | (A-21) | UD6 |
| Estonian S.S.R. | (E-15) | UR2 |
| Franz Josef Land | (NA-40) | UA1 |
| Georgian S.S.R. | (A-21) | UF6 |
| Kaliningradsk | (E-15) | UA2 |
| Kazakh S.S.R. | (A-17) | UL7 |
| Kirghiz S.S.R. | (A-17) | UM8 |
| Latvian S.S.R. | (E-15) | UQ2 |
| Lithuanian S.S.R. | (E-15) | UP2 |
| Moldavian S.S.R. | (E-16) | UO5 |
| Tadzhik S.S.R. | (A-17) | UJ8 |
| Turkmen S.S.R. | (A-17) | UH8 |
| Ukrainian S.S.R. | (E-16) | UB5 |
| Uzbek S.S.R. | (A-17) | UI8 |
| White Russian S.S.R. | (E-16) | UC2 |
| Spain | (E-14) | EA |
| Spanish Sahara (Rio de Oro) | (A-33) | EA9 |
| Sri Lanka (Ceylon) | (A-22) | 4S7 |
| Sudan | (AF-34) | ST |
| Surinam | (SA-9) | PZ |
| Svalbard Is. | (E-40) | JW |
| Swan Is. | (NA-7) | HRØ |
| Swaziland | (AF-38) | 3D6 |
| Sweden | (E-14) | SK, SL, SM |
| Switzerland | (E-14) | HB |
| Syria | (A-20) | YK |
| Taiwan (Formosa) | (A-24) | BV |
| Tanganyika (Tanzania) | (AF-37) | 5H3 |
| Tasmania | (O-30) | VK7 |
| Thailand | (A-26) | HS |
| Tibet | (A-23) | AC4 |
| Timor Is. (Portuguese) | (O-28) | CR8 |
| Togo | (AF-35) | 5V |
| Tokelau Is. | (O-31) | ZM7 |
| Tonga | (O-32) | A35 |
| Trindade & Martim Vaz Is. | (SA-11) | PYØ |
| Trinidad & Tobago Is. | (SA-9) | 9Y4 |
| Tristan da Cunha & Gough | (AF-38) | ZD9 |
| Tromelin Is. | (AF-39) | FR7 |
| Tunisia | (AF-33) | 3V8 |
| Turkey | (A-20) | TA, TC |
| Turks & Caicos Is. | (NA-8) | VP5 |
| Uganda | (AF-37) | 5X5 |
| United Arab Emirates | (A-21) | A6X |
| United Nations, Geneva | (E-14) | 4U |
| United States of America | (NA-3, 4, 5) | W, K |
| Upper Volta | (AF-35) | XT2 |
| Uruguay | (SA-13) | CX |
| Vatican City | (E-15) | HV |
| Venezuela | (SA-9) | YV |
| Virgin Is. | (NA-8) | KV4 |
| Wake Is. | (O-31) | KW6 |
| Wales | (E-14) | GW |
| Wallis & Futuna Is. | (O-32) | FW8 |
| Willis Is. | (O-30) | VK4 |
| Windward Is. | | |
| Dominica | (NA-8) | VP2D |
| Grenada & Dependencies | (NA-8) | VP2G |
| St. Lucia | (NA-8) | VP2L |
| St. Vincent & Dependencies | (NA-8) | VP2S |
| Yemen | (A-21) | 4W |
| Yugoslavia | (E-15) | YU |
| Zaire, Republic of | (AF-36) | 9Q5 |
| Zambia | (AF-36) | 9I, 9J |
| Zanzibar (Tanzania) | (AF-37) | 5H1 |

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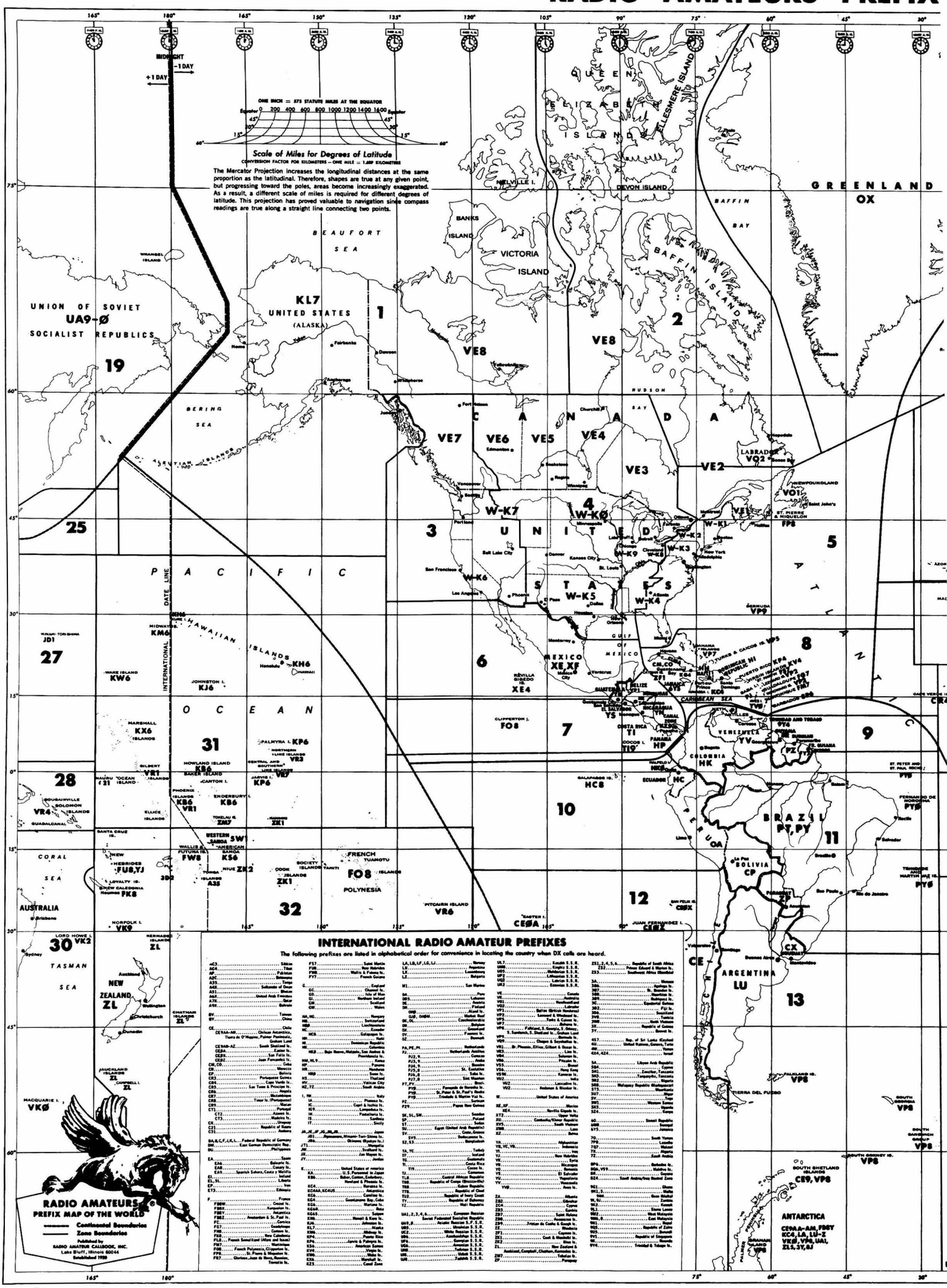
# RADIO AMATEURS PREFIX



# STANDARD TIME THROUGHOUT THE WORLD

The standard time system is based on the theoretical division of the surface of the globe into 24 zones, each of 15° of longitude. The initial zone is the one which has as its central meridian the Greenwich Meridian and with the meridians 7° 30' E. and 7° 30' W. as its eastern and western limits. Time in this zone is called Greenwich Mean Time, or GMT. Places to the east of Greenwich have faster time than Greenwich, while places to the west have slower time. Not all countries follow the International Time Zone System, but some use the time of some principal city as a standard and others have no standard time.

Reference - "Standard Time Chart of the World" No. 5192, published by U. S. Navy Hydrographic Office, Washington, D.C.

The theoretical system described is applied, in a strict sense, only in oceanic regions. On land or on groups of islands the system is applied with certain local deviations, which, are rendered necessary by frontiers, convenience of an entire island group to maintain same zone time, etc. The time used in each country, whether it is the time of the corresponding zone or modified for reasons given, is an hour fixed by law and, for this reason, is called legal time, or more generally standard time.

Another deviation from this theoretical system is that certain countries, for economic reasons, modify their legal time for part of the year, especially in summer, by advancing it an hour or another fraction of time. Where such deviations are maintained on a year-round basis, the time kept is considered to be standard time.

| COUNTRY | STANDARD TIME Hours from GMT | STANDARD TIME Time at 1200 hours GMT | DAYLIGHT SAVING TIME Hours from GMT | DAYLIGHT SAVING TIME Effective Period (first and last day) |
|---|---|---|---|---|
| ADEN | + 3 | 15 00 | | |
| AFGHANISTAN | + 4½ | 16 30 | | |
| ALBANIA | + 1 | 13 00 | | |
| ALGERIA | GMT | 12 00 | | |
| ANGOLA | + 1 | 13 00 | | |
| ARGENTINA | - 3 | 09 00 | | |
| AUSTRALIA—Victoria, New South Wales, Queensland..† | +10 | 22 00 | +11 | Oct.31,1976-Mar.5,1977 |
| Tasmania | +10 | 22 00 | +11 | Oct.31,1976-Mar.5,1977 |
| South Australia, Northern Territory | + 9½ | 21 30 | +10½ | Oct.31,1976-Mar.5,1977 |
| Western Australia | + 8 | 20 00 | | |
| AUSTRIA | + 1 | 13 00 | | |
| AZORES | - 1 | 11 00 | | |
| BAHAMAS | - 5 | 07 00 | - 4 | Apr.25-Oct.30,1976 |
| BAHRAIN | + 3 | 15 00 | | |
| BANGLADESH | + 6 | 18 00 | | |
| BELGIUM | + 1 | 13 00 | | |
| BELIZE | - 6 | 06 00 | | |
| BENIN | + 1 | 13 00 | | |
| BERMUDA | - 4 | 08 00 | - 3 | Apr.25-Oct.30,1976 |
| BOLIVIA | - 4 | 08 00 | | |
| BOTSWANA | + 2 | 14 00 | | |
| BRAZIL—Eastern | - 3 | 09 00 | | |
| Espirito Santo, Guanabarra, Minas Gerais, Rio de Janeiro | | | | |
| Sao Paulo | - 3 | 09 00 | | |
| Western Interior | - 4 | 08 00 | | |
| Territory of Acre | - 5 | 07 00 | | |
| BULGARIA | + 2 | 14 00 | | |
| BURMA | + 6½ | 18 30 | | |
| BURUNDI | + 2 | 14 00 | | |
| CAMBODIA | + 7 | 19 00 | | |
| CAMEROON | + 1 | 13 00 | | |
| CANADA—Newfoundland | - 3½ | 08 30 | - 2½ | Apr.25-Oct.30,1976 |
| Atlantic Time | - 4 | 08 00 | - 3 | Apr.25-Oct.30,1976 |
| Eastern Time | - 5 | 07 00 | - 4 | Apr.25-Oct.30,1976 |
| Central Time | - 6 | 06 00 | - 5 | Apr.25-Oct.30,1976 |
| Mountain Time | - 7 | 05 00 | - 6 | Apr.25-Oct.30,1976 |
| Pacific Time | - 8 | 04 00 | - 7 | Apr.25-Oct.30,1976 |
| Whitehorse,Dawson City | - 9 | 03 00 | | |
| CANARY ISLANDS | GMT | 12 00 | + 1 | Mar.28-Sep.25,1976 |
| CAPE VERDE ISLANDS | - 2 | 10 00 | | |
| CAROLINE ISLANDS | | | | |
| Palau Is | + 9 | 21 00 | | |
| Truk, Yap Is | +10 | 22 00 | | |
| Ponape | +11 | 23 00 | | |
| CENTRAL AFRICAN REPUBLIC | + 1 | 13 00 | | |
| CHAD | + 1 | 13 00 | | |
| CHILE | - 4 | 08 00 | - 3 | Oct.10,1976-Mar.12,1977 |
| CHINA | | | | |
| Zone 1(Tihwa) | + 6 | 18 00 | | |
| Zone 2(Chung-King, Lanchow) | + 7 | 19 00 | | |
| Zone 3(Peking, Shanghai) | + 8 | 20 00 | | |
| Zone 4(Harbin) | + 8½ | 20 30 | | |
| COCOS ISLANDS | + 6½ | 18 30 | | |
| COLOMBIA | - 5 | 07 00 | | |
| COMORO ISLANDS | + 3 | 15 00 | | |
| CONGO REPUBLIC | + 1 | 13 00 | | |
| COOK ISLANDS | -10½ | 01 30 | | |
| COSTA RICA | - 6 | 06 00 | | |
| CUBA | - 5 | 07 00 | - 4 | Apr.4-Sep.25,1976 |
| CYPRUS | + 2 | 14 00 | + 3 | May 15-Oct.10,1976 |
| CZECHOSLOVAKIA | + 1 | 13 00 | | |
| DENMARK | + 1 | 13 00 | | |
| DOMINICAN REPUBLIC | - 4 | 08 00 | | |
| EASTER ISLANDS | - 7 | 05 00 | - 6 | Oct.10,1976-Mar.12,1977 |
| ECUADOR | - 5 | 07 00 | | |
| EGYPT | + 2 | 14 00 | | |
| ETHIOPIA | + 3 | 15 00 | | |
| FIJI ISLANDS | +12 | 24 00 | | |
| FINLAND | + 2 | 14 00 | | |
| FRANCE (incl. Corsica) | + 1 | 13 00 | + 2 | Mar.28-Sep.25,1976 |
| FRENCH SOMALILAND | + 3 | 15 00 | | |
| GABON | + 1 | 13 00 | | |
| GAMBIA | GMT | 12 00 | | |
| GERMANY | + 1 | 13 00 | | |
| GHANA | GMT | 12 00 | | |
| GIBRALTAR | + 1 | 13 00 | | |
| GILBERT & OCEAN ISLANDS | +12 | 24 00 | | |
| GREAT BRITAIN | GMT | 12 00 | + 1 | Mar.21-Oct.23,1976 |
| GREECE (and Crete) | + 2 | 14 00 | + 3 | Apr.11-Oct.9,1976 |
| GREENLAND, Sooresby Sound | - 2 | 10 00 | | |
| Angmagssalik and W. Coast | - 3 | 09 00 | | |
| Thule | - 4 | 08 00 | | |
| GUAM | +10 | 22 00 | | |
| GUATEMALA | - 6 | 06 00 | | |
| GUINEA,EQUATORIAL | + 1 | 13 00 | | |
| GUINEA, FRENCH | - 3 | 09 00 | | |
| GUINEA, PORTUGUESE | - 1 | 11 00 | | |
| GUINEA, Republic of | GMT | 12 00 | | |
| GUYANA | - 3 | 09 00 | | |
| HAITI | - 5 | 07 00 | | |
| HONDURAS | - 6 | 06 00 | | |
| HONG KONG (and MACAO) | + 8 | 20 00 | + 9 | Apr.18-Oct.16,1976 |
| HUNGARY | + 1 | 13 00 | | |
| ICELAND | GMT | 12 00 | | |
| INDIA | + 5½ | 17 30 | | |
| INDONESIA | | | | |
| Western Time (Sumatra, Java, Madura, Bali, Bangka, Beliting, Lombok) | + 7 | 19 00 | | |
| Central Time (Borneo,Celebes, Flores, Sumbawa, Sumba, Timor) | + 8 | 20 00 | | |
| Eastern Time (Molucca Is., Tanimbar, Kai, West Irian) | + 9 | 21 00 | | |
| IRAN | + 3½ | 15 30 | | |
| IRAQ | + 3 | 15 00 | | |
| IRELAND | GMT | 12 00 | + 1 | Mar.21-Oct.23,1976 |
| ISRAEL | + 2 | 14 00 | | |
| ITALY (incl. Sicily and Sardinia) | + 1 | 13 00 | + 2 | May 30-Sep.25, 1976 |
| IVORY COAST | GMT | 12 00 | | |
| JAMAICA | - 5 | 07 00 | - 4 | Apr.25-Oct.30,1976 |
| JAPAN | + 9 | 21 00 | | |
| JORDAN | + 2 | 14 00 | + 3 | May 1-Sep.30,1976 |
| KAMARAN ISLAND | + 3 | 15 00 | | |
| KENYA | + 3 | 15 00 | | |
| KOREA | + 9 | 21 00 | | |
| KUWAIT | + 3 | 15 00 | | |
| LAOS | + 7 | 19 00 | | |
| LEBANON | + 2 | 14 00 | + 3 | May 1-Sep.30,1976 |
| LIBERIA | GMT | 12 00 | | |
| LIBYA | + 2 | 14 00 | | |
| LUXEMBOURG | + 1 | 13 00 | | |
| MADEIRA | GMT | 12 00 | | |
| MALAGASY | + 3 | 15 00 | | |
| MALAWI | + 2 | 14 00 | | |
| MALAYSIA | + 7½ | 19 30 | | |
| Borneo(except Indonesian Borneo) | + 8 | 20 00 | | |
| MALI | GMT | 12 00 | | |
| MALTA | + 1 | 13 00 | + 2 | Apr.18-Sep.18,1976 |
| MARIANA ISLANDS | +10 | 22 00 | | |
| MARSHALL ISLANDS | | | | |
| Majuro(same day as Guam) | +12 | 24 00 | | |
| Kwajalein(same day as Hawaii) | -12 | 24 00 | | |
| MAURITANIA | GMT | 12 00 | | |
| MAURITIUS | + 4 | 16 00 | | |
| MEXICO—Central Time | - 6 | 06 00 | | |
| Mountain Time | - 7 | 05 00 | | |
| Pacific Time .# | - 8 | 04 00 | - 7 | Apr.25-Oct.30,1976 |
| MOROCCO | GMT | 12 00 | | |
| MOZAMBIQUE | + 2 | 14 00 | | |
| NAURU ISLAND | +11½ | 23 30 | | |
| NEPAL | + 5½ | 17 30 | | |
| NETHERLANDS ANTILLES | - 4 | 08 00 | | |
| NETHERLANDS | + 1 | 13 00 | | |
| NEW CALEDONIA | +11 | 23 00 | | |
| NEW GUINEA—Papua | +10 | 22 00 | | |
| West Irian | + 9½ | 21 30 | | |
| NEW HEBRIDES | +11 | 23 00 | | |
| NEW ZEALAND | +12 | 24 00 | +13 | Oct.31,1976-Mar.5,1977 |
| NICARAGUA | - 6 | 06 00 | | |
| NIGER | + 1 | 13 00 | | |
| NIGERIA | + 1 | 13 00 | | |
| NORFOLK ISLAND | +11½ | 23 30 | | |
| NORWAY | + 1 | 13 00 | | |
| OKINAWA(Ryukyu Islands) | + 9 | 21 00 | | |
| OMAN (Muscat) | + 4 | 16 00 | | |
| PAKISTAN | + 5 | 17 00 | | |
| PANAMA (Incl. Canal Zone) | - 5 | 07 00 | | |
| PAPUA NEW GUINEA | +10 | 22 00 | | |
| PARAGUAY | - 4 | 08 00 | | |
| PERU | - 5 | 07 00 | | |
| PHILIPPINE ISLANDS | + 8 | 20 00 | | |
| POLAND | + 1 | 13 00 | | |
| PORTUGAL .■ | GMT | 12 00 | + 1 | Through Sep.25, 1976 |
| PUERTO RICO | - 4 | 08 00 | | |
| QATAR | + 3 | 15 00 | | |
| REUNION | + 5 | 17 00 | | |
| RHODESIA | + 2 | 14 00 | | |
| ROMANIA | + 2 | 14 00 | | |
| RWANDA | + 2 | 14 00 | | |
| SALVADOR, EL | - 6 | 06 00 | | |
| SAMOAN ISLANDS | -11 | 01 00 | | |
| SAUDI ARABIA ...* | + 3 | 15 00 | | |
| SENEGAL | GMT | 12 00 | | |
| SIERRA LEONE | GMT | 12 00 | | |
| SINGAPORE | + 7½ | 19 30 | | |
| SOLOMON ISLANDS | +11 | 23 00 | | |
| SOMALIA | + 3 | 15 00 | | |
| SOUTH AFRICA,Republic of | + 2 | 14 00 | | |
| SOUTH WEST AFRICA | + 2 | 14 00 | | |
| SPAIN | + 1 | 13 00 | + 2 | Mar.28-Sep.25,1976 |
| SPANISH SAHARA | GMT | 12 00 | | |
| SRI LANKA,Republic of | + 5½ | 17 30 | | |
| SUDAN | + 2 | 14 00 | | |
| SURINAM | - 3½ | 08 30 | | |
| SWEDEN | + 1 | 13 00 | | |
| SWITZERLAND | + 1 | 13 00 | | |
| SYRIA | + 2 | 14 00 | + 3 | May 1-Aug.31,1976 |
| TAHITI | -10 | 02 00 | | |
| TAIWAN | + 8 | 20 00 | | |
| TANZANIA | + 3 | 15 00 | | |
| THAILAND | + 7 | 19 00 | | |
| TOGO | GMT | 12 00 | | |
| TONGA (Friendly Islands) | +13 | 01 00 | | |
| TUNISIA | + 1 | 13 00 | | |
| TURKEY | + 2 | 14 00 | + 3 | Mar.21-Oct.31,1976 |
| UGANDA | + 3 | 15 00 | | |
| URUGUAY | - 3 | 09 00 | | |
| U.S.A.—Eastern Time | - 5 | 07 00 | - 4 | |
| Central Time | - 6 | 06 00 | - 5 | |
| Mountain Time | - 7 | 05 00 | - 6 | |
| Pacific Time | - 8 | 04 00 | - 7 | Apr.25-Oct.30,1976 |
| ALASKA—Ketchikan to Skagway | - 8 | 04 00 | - 7 | |
| Skagway to 141° long. W.(Yakutat) | - 9 | 03 00 | - 8 | |
| 141° long. W. to 162° long. W | -10 | 02 00 | - 9 | |
| 162° long. W. to Western tip | -11 | 01 00 | -10 | |
| HAWAIIAN ISLANDS | -10 | 02 00 | | |
| U.S.S.R.—Moscow, Ukraine, West | + 3 | 15 00 | | |
| Approximately every 15° from 30° 30' E. to 172° 30' W. add 1 hr. | + 4 | 16 00 | | |
| | +12 | 24 00 | | |
| VENEZUELA | + 4 | 08 00 | | |
| VIETNAM | + 8 | 20 00 | | |
| VOLTAIC REPUBLIC | GMT | 12 00 | | |
| WEST INDIES—Barbados,Guadeloupe, Leeward Islands, Martinique, Tobago, Trinidad, Windward Islands | - 4 | 08 00 | | |
| Aruba, Bonaire, Curacao | - 4 | 08 00 | | |
| Turks and Caicos Islands | - 5 | 07 00 | | |
| YEMEN | + 3 | 15 00 | | |
| YUGOSLAVIA | + 1 | 13 00 | | |
| ZAIRE | | | | |
| Kinshasa, Mbandaka | + 1 | 13 00 | | |
| Orientale, Katanga, Kivu, Kasai | + 2 | 14 00 | | |
| ZAMBIA | + 2 | 14 00 | | |

*—Local Clock Time varies each day according to Sunset. (May 1968 Dhahran Adopted GMT + 3 as Standard Time). #—Only Mexicali and Tijuana observe DST.
†—Queensland does not observe Daylight Saving Time. ■—Effective Sep. 26, 1976 Portugal will adopt GMT as Standard Time.

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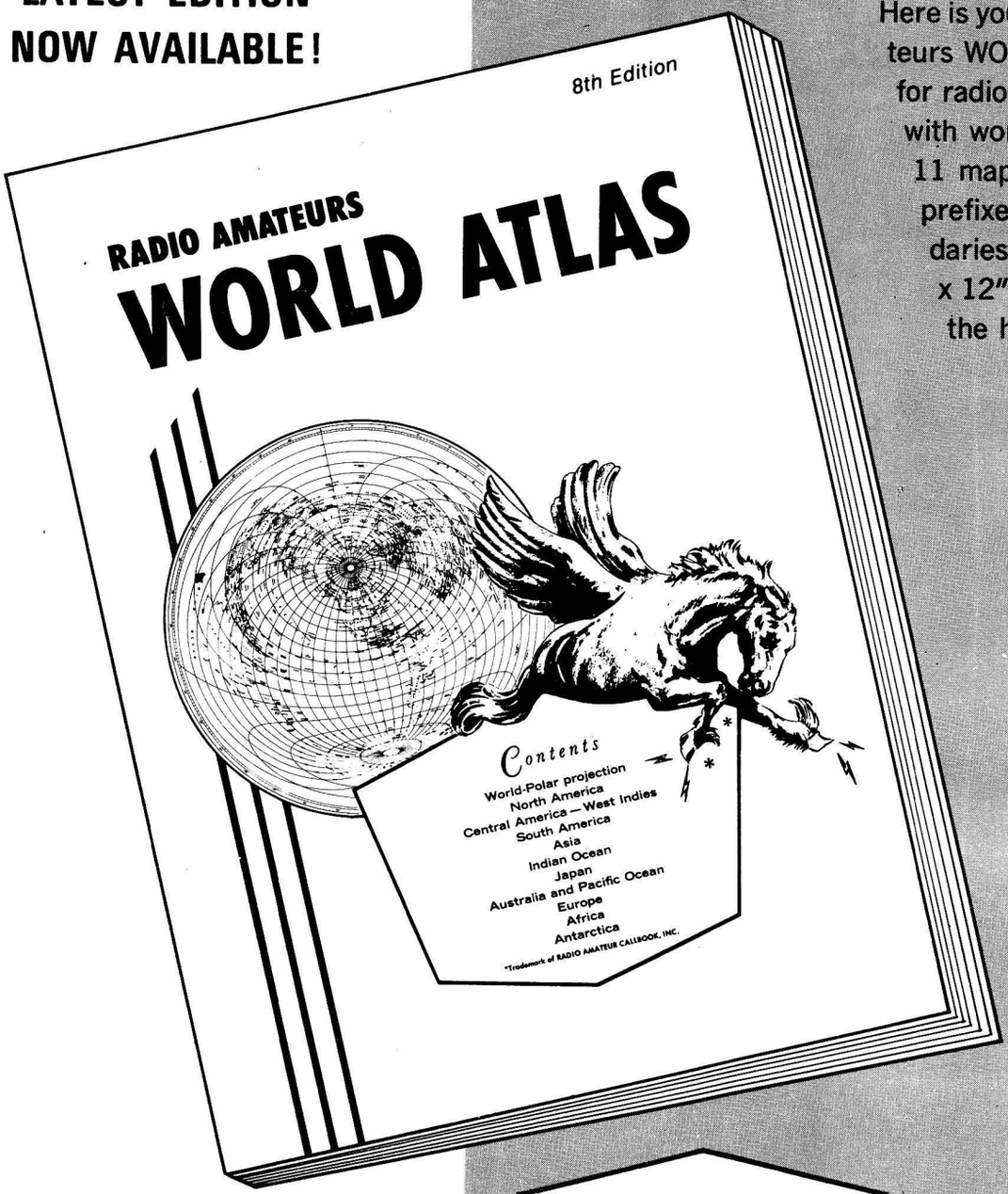


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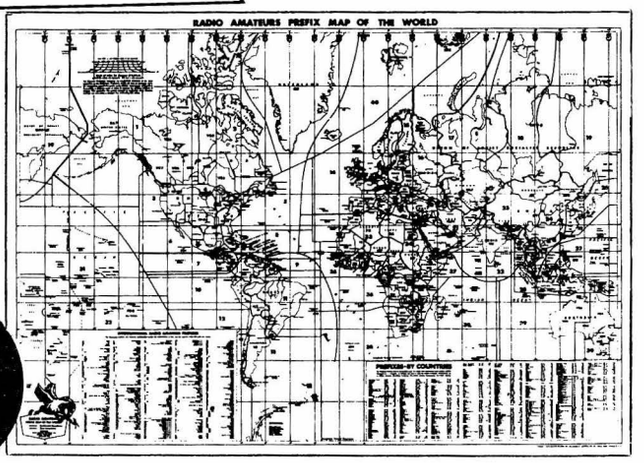


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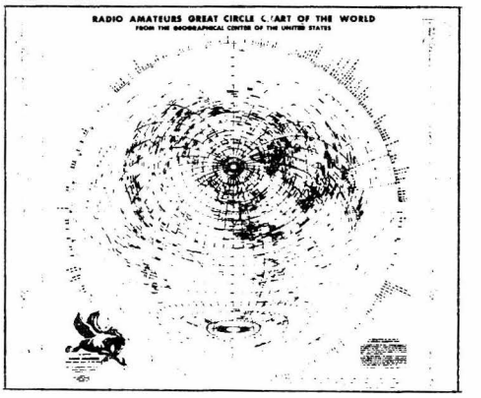


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* *Please note — this map is centered on 40° North and 100° West — the geographical center of the United States.*

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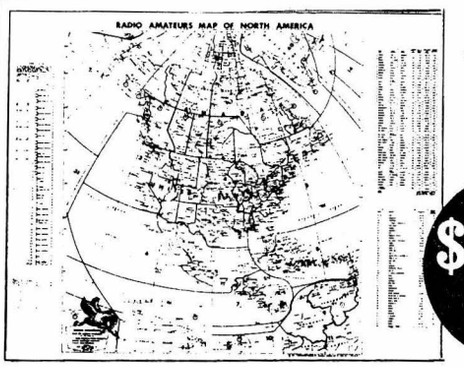


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# ARRL SAFETY CODE

1. KILL ALL POWER CIRCUITS COMPLETELY BEFORE TOUCHING ANYTHING BEHIND THE PANEL OR INSIDE THE CHASSIS OR THE ENCLOSURE.

2. Never allow anyone else to switch the power on and off for you while you're working on equipment.

3. Don't shoot trouble in a transmitter when you're tired or sleepy.

4. Never adjust variable links by hand. Use special care when checking energized tank circuits with absorption-type wavemeters.

5. Avoid bodily contact with grounded metal (racks, radiators) or damp floors when working on the transmitter.

6. Never wear phones while working on gear.

7. Follow the rule of keeping one hand in your pocket.

8. Instruct members of your household HOW to turn the power off, and HOW to apply artificial respiration. Instruction sheets on the latest approved method of resuscitation can be obtained from your local Red Cross office.

9. Develop your own safety technique. TAKE TIME TO BE CAREFUL. DEATH IS PERMANENT.

## RULES FOR EQUIPMENT DESIGN AND CONSTRUCTION

### ONE DISCONNECT SWITCH

A single plainly-labeled main switch should be provided to cut off all power from the equipment.

### POWER SUPPLIES

All power supplies should be so enclosed or constructed that accidental bodily contact with power circuits is impossible.

All negative plate-supply and positive bias-supply terminals should be connected to the chassis and the chassis connected to a water pipe or other good ground connection.

Every power supply should use a conservatively-rated bleeder resistor. If it is placed on top of the chassis for ventilation, cover it with screening or perforated metal. When using shielded wire for external power cabling, make sure the shielding is grounded to protect you in case of insulation breakdown.

### PANEL CONTROLS AND METERING

Every control shaft extending through the front of the panel should be at ground potential. The frames of key or metering jacks should be fastened to the grounded panel. Meters, unless connected in the cathode or centertap, should be recessed to avoid danger of contact with the adjusting screw.

### AUDIO EQUIPMENT

In addition to the construction rules set forth for power supplies, the following rule should be followed for speech equipment. The microphone stand and the enclosure should always be connected to the microphone-cable shield which, in turn, should be grounded to the chassis.

### LIGHTNING PROTECTION

Merely "grounding everything" is not adequate protection from direct lightning strikes or static build-up. Lightning has devious methods of going where it isn't supposed to. There is only one way to protect your radio from lightning, and that is to disconnect everything completely and then ground all the disconnected lines. This applies to incoming power circuits, also; "pulling the big switch" is an old adage which makes sense. Finally, pay special attention to rotor control boxes; a lightning strike can come into the box via the control cable, go through the control box, out the power cord, and through your "cube-tap" (or whatever) and thence up the power cord of your radio, even though all power cords have been disconnected from the wall socket! Please, HANDLE EVERY CIRCUIT WITH CARE. The lowly 110-115 volts has caused more electrocutions than any other.

CD-84(R474)

American Radio Relay League, Newington, Connecticut, U.S.A. 06111

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**Is there any change in your QTH? Check this issue — is your name and address correct as listed?**

**If there is a correction or change to be made send in your official QSL card with the new information. Please print your name as it appears on your FCC license.**

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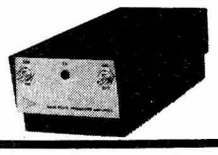

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# INTERNATIONAL POSTAL RATES

THESE ARE THE POSTAL RATES IN EFFECT AT PRESS TIME OF THIS ISSUE.

| | U.S. and Possessions Canada Mexico | Central America Columbia Venezuela Caribbean | So. America Europe Africa Asia Oceania |
|---|---|---|---|
| Surface postcard (QSL) | 9¢ | 12¢ | 12¢ |
| Surface letter (1 ounce) | 13¢ | 18¢* | 18¢* |
| Additional ounces up to 13 oz. | 11¢ | | |
| Air postcard (QSL) | 14¢ | 21¢ | 21¢ |
| Air letter (1 ounce) | 17¢ | 25¢** | 31¢*** |
| Additional ounces up to 9 oz. | 15¢ | (each ½ oz.) | (each ½ oz.) |
| Aerogramme | 22¢ | 22¢ | 22¢ |

*Over 1 up to 2 oz. 31¢, over 2 up to 4 oz. 41¢, over 4 up to 8 oz. 82¢, over 8 oz. up to 1 lb. $1.58, over 1 lb. up to 2 lbs. $2.75 over 2 lbs. up to 4 lbs. $4.46.

**Over 2 oz. 21¢ each additional half ounce.

***Over 2 oz. 26¢ each additional half ounce.

INTERNATIONAL REPLY COUPONS (IRC's) of United States issue may be purchased at U.S. postoffices for 42¢ each. Each coupon is exchangeable at a post office in any country for a stamp or stamps representing the international postage on a single rate surface letter. Below are listed the number of IRC's required to prepay an air mail letter of the first weight unit from the countries indicated to the United States.

| | |
|---|---|
| Afghanistan | 5 |
| Aland Is. (Finland) | 2 |
| Albania | 4 |
| Algeria | 2 |
| Andorra | 2 |
| Angola (Portugal) | 3 |
| Argentina | 3 |
| Ascension Is. (Great Britain) | 3 |
| Australia | 4 |
| Austria | 2 |
| Azores Is. (Portugal) | 2 |
| Bahama Is. (Great Britain) | 2 |
| Balearic Is. (Spain) | 2 |
| Bangladesh | 2 |
| Barbados Is. (West Indies) | 3 |
| Belgium | 2 |
| Belize | 2 |
| Bermuda Is. | 2 |
| Bhutan | |
| Bolivia | 2 |
| Botswana | 5 |
| Brazil | 2 |
| Brunei | 8 |
| Bulgaria | 3 |
| Burma | 4 |
| Burundi | 3 |
| Cambodia/Khmer Republic | 3 |
| Cameroon | 2 |
| Canada | 2 |
| Canary Is. (Spain) | 2 |
| Cape Verde Is. (Portugal) | 3 |
| Cayman Is. (West Indies) | 3 |
| Central African Republic | 2 |
| Chad | 2 |
| Chile | |
| China (Taiwan) | 3 |
| China (Mainland) | 3 |
| Colombia | 3 |
| Comoro Is. (France) | 3 |
| Congo (Brazzaville) | 2 |
| Cook Is. (New Zealand) | 3 |
| Corsica (France) | 2 |
| Costa Rica | 2 |
| Cuba | 4 |
| Cyprus | 4 |
| Czechoslovakia | 2 |
| Dahomey | 2 |
| Denmark | 2 |
| Dominican Republic | 2 |
| Ecuador | 3 |
| Egypt (United Arab Republic) | 2 |
| El Salvador | 2 |
| Ethiopia | 3 |
| Faeroe Is. (Denmark) | 2 |
| Falkland Is. (Great Britain) | 3 |
| Fiji Is. (Great Britain) | 4 |
| Finland | 2 |
| France | 2 |
| French Polynesia Is. | 2 |
| French Somaliland(Afars and Issas) | 2 |
| Gabon Republic | 2 |
| Gambia | 4 |
| Germany, Western Zone | 2 |
| Germany, Eastern Zone | 2 |
| Ghana | 3 |
| Gibralter (Great Britain) | 2 |
| Gilbert and Ellice Is. | 5 |
| Great Britain | 2 |
| Greece (incl. Crete) | 2 |
| Greenland (Denmark) | 2 |
| Grenada & Grenadines | 4 |
| Guadaloupe Is. | 2 |
| Guatemala | 2 |
| Guiana, French | 2 |
| Guinea, Portuguese | 2 |
| Guinea, Republic of | 2 |
| Guyana | 4 |
| Haiti | 5 |
| Honduras, Republic of | 3 |
| Hong Kong | 5 |
| Hungary | 2 |
| Iceland | 2 |
| India | 3 |
| Indonesia | 3 |
| Iran | 4 |
| Iraq | 3 |
| Ireland (Eire) | 3 |
| Israel | 3 |
| Italy | 2 |
| Ivory Coast | 2 |
| Jamaica | |
| Japan | 2 |
| Jordan | 3 |
| Kenya | 4 |
| Korea | 3 |
| Kuwait | 4 |
| Laos | |
| Lebanon | 3 |
| Leeward Is.(West Indies) | 3 |
| Lesotho | 5 |
| Liberia | 5 |
| Libya | 2 |
| Liechtenstein | 2 |
| Luxembourg | 2 |
| Macao (Portugal) | 3 |
| Madeira Is. (Portugal) | 2 |
| Malagasy Republic (Madagascar) | 3 |
| Malawi | 6 |
| Malaysia | 5 |
| Maldive Is. | 5 |
| Mali Republic | 2 |
| Malta (Great Britain) | 2 |
| Martinique (France) | 2 |
| Mauritania | 2 |
| Mauritius (Great Britain) | 3 |
| Mexico | 2 |
| Morocco | 2 |
| Mozambique (Portugal) | 3 |
| Nauru Is. | 4 |
| Nepal | 5 |
| Netherlands | 2 |
| Netherlands Antilles | 2 |
| New Caledonia (France) | 2 |
| New Hebrides Is. | 2 |
| New Zealand | 3 |
| Nicaragua | 4 |
| Niger | 2 |
| Nigeria | 3 |
| Northern Ireland | 2 |
| Norway | 2 |
| Oman, Sultanate of | 4 |
| Pakistan | 2 |
| Panama | 2 |
| Papua New Guinea | 3 |
| Paraguay | 3 |
| Persian Gulf Ports | 4 |
| Peru | 3 |
| Philippines | 3 |
| Pitcairn Is. (Great Britain) | |
| Poland | 2 |
| Portugal | 2 |
| Qatar | 4 |
| Reunion Is. (France) | 2 |
| Rhodesia | 5 |
| Romania | 3 |
| Rwanda | 2 |
| Ryukyu Is. | |
| St. Helena Is. (Great Britain) | 3 |
| St. Pierre and Miquelon Is.(France | 2 |
| Samoa, Western (Great Britain) | 4 |
| Saudi Arabia | 3 |
| Senegal | 2 |
| Seychelles Is.(Great Britain) | 3 |
| Sierra Leone | 3 |
| Solomon Is. (Great Britain) | 5 |
| Somalia | |
| South Africa | 5 |
| South-West Africa (Namibia) | 5 |
| South Yemen | 5 |
| Spain | 2 |
| Spanish West Africa | 2 |
| Sri Lanka (Ceylon) | 5 |
| Sudan | 3 |
| Surinam | 1 |
| Swaziland | 5 |
| Sweden | 2 |
| Switzerland | 2 |
| Syria | 3 |
| Tanzania | 4 |
| Tasmania (Australia) | 4 |
| Thailand | 3 |
| Timor (Portugal) | 4 |
| Togo | 2 |
| Tonga Is. (Great Britain) | 3 |
| Trinidad and Tobago Is.(Britain) | 2 |
| Tristan de Cunha & Gough Is. | 3 |
| Tunisia | 2 |
| Turkey | 3 |
| Turks & Caicos Is.(Great Britain) | 2 |
| Uganda | 4 |
| United Arab Emirates | 4 |
| U. S. S. R. | |
| Upper Volta | 2 |
| Uruguay | 2 |
| Vatican City | 2 |
| Venezuela | 2 |
| Vietnam | 2 |
| Virgin Is. (Great Britain) | 2 |
| West Irian (Indonesia) | 3 |
| Windward Is. (West Indies) | 2 |
| Yemen | |
| Yugoslavia | 3 |
| Zaire, Rep. of | 2 |
| Zambia | |
| Zanzibar | 4 |

# TELEGRAPH CODES

| CONTINENTAL CODE | MORSE CODE |
|---|---|
| Used in ham radio | Used on land lines in United States and Canada |

| | Continental | Morse |
|---|---|---|
| A | • — | • — |
| B | — • • • | — • • • |
| C | — • — • | • • • |
| D | — • • | — • • |
| E | • | • |
| F | • • — • | • — • |
| G | — — • | — — • |
| H | • • • • | • • • • |
| I | • • | • • |
| J | • — — — | — • — — |
| K | — • — | — • — |
| L | • — • • | — — |
| M | — — | — • |
| N | — • | • |
| O | — — — | • • |
| P | • — — • | • • — — • |
| Q | — — • — | • • — • |
| R | • — • | • — • |
| S | • • • | • • • |
| T | — | — |
| U | • • — | • • — |
| V | • • • — | • • • — |
| W | • — — | • — — |
| X | — • • — | • • — — |
| Y | — • — — | • • |
| Z | — — • • | • • • |
| & | | • — • • • |

There are no space letters in the Continental Code

C, O, R, Y, Z and & are composed of dots and spaces
T is a short dash
L is a longer dash
Zero (0) is usually abbreviated to T

| Figures | Continental | Morse |
|---|---|---|
| 1 | • — — — — | • — — — • |
| 2 | • • — — — | • • — — • |
| 3 | • • • — — | • • • — • |
| 4 | • • • • — | • • • • — |
| 5 | • • • • • | — — — |
| 6 | — • • • • | • • • • • • |
| 7 | — — • • • | — — • • |
| 8 | — — — • • | — • • • • |
| 9 | — — — — • | — • • — |
| 0 | — — — — — | — — — — |

| Punctuation | Continental | Morse |
|---|---|---|
| (.) | • — • — • — | • • — — • • |
| (,) | — — • • — — | • — • — |
| (?) | • • — — • • | — • • — • |
| (:) | — — — • • • | — • — • • • |
| (;) | — • — • — • | — • • • • • |
| (-) | — • • • • — | • • • • • — • • |
| (!) | None at present | — — — • |
| (') | • — — — — • | • • — • • — — • |
| (/) | — • • — • | • • — — |
| ( ) | — • — — • — | ( • — — • |
| | | ) • — — • — |
| (") | • — • • — • | • • — • • — • • |
| (") | | • • — • — • — • |

**EMERGENCY SIGNAL**

In a dire emergency situation, use SOS by code, MAYDAY by voice.


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# TELEGRAPHERS' ABBREVIATIONS IN CURRENT USE

‿ denotes short space, as in American Morse o, ee; c, ie; &, es.
‾ denotes letters sent together, as in ar, sent .-.-.

### - A -

| | |
|---|---|
| aa | all after |
| ab | all before |
| abl | able |
| abt | about |
| ads,adr | address |
| adv | advise |
| af | Africa |
| aftrnn | afternoon |
| agn | again |
| ahd | ahead |
| alng | along |
| am | amplitude modulation |
| ani | any |
| anr | another |
| ant | antenna |
| app | appreciate |
| ar | end of message |
| as,as m | wait, wait a minute |
| au | fractions follow |
| aw | auf wiedersehn (Ger), see you later |

### - B -

| | |
|---|---|
| b | be |
| b4 | before |
| balun | balanced-to-unbalanced |
| bc,bcl | broadcast, broadcast listener |
| bcnu | be seeing you |
| bd | buenos dias (Sp), bad |
| bda | birthday |
| bee,bo,bth | both, as in "u5 bee", up both (Morse) |
| bfo | beat frequency oscillator |
| bjr | bon jour (Fr) |
| bk,bkg | back,break,black,book,breaking |
| bkr | breaker,circuit-breaker |
| bn | been,brown,between,buenas noches (Sp) |
| bq | answer to rq (request) |
| brg,brng | bearing,heading |
| bsr | bon soir (Fr) |
| btr | better |
| buk | book |

### - C -

| | |
|---|---|
| c | yes |
| cd | card,could |
| cd,cud,cdnt | could,couldn't |
| cfm,cfmg | confirm,confirming |
| ck | check |
| ckt,cct | circuit |
| cl,clg | call,calling,closed |
| clbk | callbook |
| clix | clicks |
| clr | clear |
| cndx,condx,cdx | conditions |
| cnt,cnti,cnty | count, county |
| cnvn | convention |
| coz,cos,cuz,becuz | because |
| cpi | copy |
| cq | general call to all stations |
| cs | call sign,call letters |
| cua,cuagn | see you again |
| cul | see you later |
| cum,cm,cmg | come,coming |
| cupla | a couple of |
| cw | continuous wave,manual keying |

### - D -

| | |
|---|---|
| da | day |
| dbl | double |
| dcn | direction |
| dct | direct |
| de | from |
| df | direction finder |
| dif,diff | difference |
| dlr,dld | dealer,deliver,delivered |
| dn,d | down (in frequency) |
| dnt,dmi | do not, don't mention it |
| dpe | dope,information |
| dr | dear |
| ds | thanks,danke schon (Ger) |
| dsnt | does not |
| dsw | goodbye,do svidaniya (Russian) |
| dunno | don't know |
| dx | distance, or rare station |
| dxpdn | dx expedition |

### - E -

| | |
|---|---|
| eem | old man |
| eh | ? |
| el,els | antenna element(s) |
| em | them |
| eni,enibdi,enihw | any,anybody,anyhow |
| ere | here |
| es,es | and (from Morse "&", sent . . . .) |
| eta | estimated time of arrival |
| etd | estimated time of departure |
| eu | Europe |

### - F -

| | |
|---|---|
| fb,vfb | fine business,good (enthusiastic approval) |
| fd | field day,feed,food |
| fer | for |
| fiver | QSA-5 |
| fld | field,filed |
| flr | floor |
| fm,frm | from,frequency modulation |
| fnd | friend, find, found |
| fni | funny |
| foxes | teleprinter test tapes |
| freq,fq | frequency |
| fwd | forward |
| fyi | for your information |

### - G -

| | |
|---|---|
| ga | good afternoon,go ahead |
| gb | good bye |
| gd | good day, good |
| ges,gess | guess |
| gg | going |
| gl | good luck |

### - G - (Cont.)

| | |
|---|---|
| gld | glad |
| gn,gng | gone,green,going |
| gnd | ground |
| gotta | got to,have to,must |
| gp | ground plane,group (word) |
| grs | groups (as in msg code groups) |
| gud | good |
| gtgs | greetings |
| gv,gvg | give,giving |

### - H -

| | |
|---|---|
| hd,hrd | had,hard,heard |
| hdg | heading,antenna azimuth |
| hed | he would |
| hi | high, laughter, (sometimes !) |
| hlo | hello |
| hlv | hasta la vista (Sp),see you later |
| hpe,hpg | hope,hoping |
| hpi | happy |
| hpn,wa hpn | happen,what happened |
| hq,hdqtrs | headquarters |
| hr,hrg,hrs | here,hear,hour,hearing,here is,hours |
| hv,hvnt,hvg | have,haven't,having |
| hvi | heavy |
| hw,hws | how? how is? |

### - I -

| | |
|---|---|
| i? | ready? here goes the tape |
| id | I would |
| ie | clear? (response: i-go, e-wait) |
| im | I'm,him,intermodulation |
| imi | ? |
| info | information |
| irpt | I repeat |

### - K -

| | |
|---|---|
| k | go ahead,end of transmission |
| ka | beginning of transmission (formal) |
| klix | clicks |
| klvb | que (ke) le vaya bien (Sp) "That it goes well with you" |
| kn | go ahead, but only the station(s) called, I will answer no other calls,known |
| knw | know |

### - L -

| | |
|---|---|
| lkg | looking |
| ll | landline,telephone or telegraph |
| lng | long |
| lotsa | lots of |
| lp | long path (long way around earth) |
| lsn | listen |
| ltr | letter,later |
| lv,lvg | leave,leaving |
| lw | long wave,"lone wolf" (independent DXer) |

### - M -

| | |
|---|---|
| mag,rag | magazine |
| mci,mci bcp | merci, merci beaucoup (Fr), thanks |
| mgr | manager |
| mi | my |
| mil,mill,ma | milliampere,typewriter |
| min | minute,minimum |
| mk | mark (opposite of space) |
| ml,mlg | mail,mailing |
| mng | morning,meaning |
| mni | many |
| mnl | manual |
| mo | moment |
| msg | message |

### - N -

| | |
|---|---|
| n | no |
| nd | nothing doing |
| ng | no good |
| nil | nothing |
| nir | lazy "nil" |
| nm | nothing more,no more |
| nn | noon |
| no | know |
| nr | near,number |
| nvr | never |
| nw | now |

### - O -

| | |
|---|---|
| ob,eeb | old boy |
| oc | old chap |
| ok,eek | all correct |
| ol | old lady |
| om,eem | old man |
| op,opr | operator |
| opn,opg | operation,operating |
| ot | old timer |

### - P -

| | |
|---|---|
| pa | power amplifier |
| pbl,pbli | probable,preamble,probably |
| pctcs | practices |
| pd | period,paid |
| pdc | pure dc,clean note |
| pkg | package,parking |
| plsr | pleasure |
| ppgn | propagation |
| ppl | people |
| prtbl | portable |
| pse,pls,psd | please,pleased |
| psbl,psbli | possible, possibly |
| psn,posn | position |
| pt,ptd,ptg | point,part,pointed,pointing |
| pwr | power |

### - Q -

| | |
|---|---|
| qhm | tuning from high frequency to middle of band |
| qlf | try sending with left foot awhile |
| qlm | tuning from low frequency to middle of band |
| qlz | operator too lazy |
| qmh | tuning from middle frequency to high frequency |
| qml | tuning from middle frequency to low frequency |
| qmt | try mailing your tfc |
| qrnn | man-made electrical noise |
| qsl | mail card confirming qso |
| qsll | send card after receiving mine |
| qst | of interest to all amateurs |

### - R -

| | |
|---|---|
| r | received |
| rac | rectified ac |
| rc | rag chew |
| rcd,recd | received |
| rcr,recr,rcvr,rx | receiver |
| rd | read (copy),red |
| rdi,rdy | ready |
| rdo | radio,radio station |
| re | concerning |
| reg,regs | regular,regulations |
| rito | righto |
| rm | room |
| rng | running |
| rockbound,rockbnd | crystal controlled, no vfo |
| rpt | report,repeat |
| rq | request |
| rst | readability 1-5,strength 1-9,tone 1-9 |

### - S -

| | |
|---|---|
| sa,sez,sed,sa | say,says,said,South America |
| sae | self-addressed envelope |
| sase | self-addressed stamped envelope |
| sb,ssb | single sideband |
| sgd | signed |
| shd,shud,shudn't | should,shouldn't |
| sig,sigs | signal(s),signature |
| simo | simultaneously |
| sked | schedule |
| sl | see you later |
| sn | soon,seen,signal/noise |
| sp | short path (the closer great-circle path) |
| sri | sorry |
| ss | sweepstakes |
| ssn | season,as in "ssns gtgs" |
| stn | station |
| su | I'll see you |
| sum | some |
| sumbdi | somebody |
| svc | service |
| svl | several |
| sw | switch,short wave |
| sx | dollar sign "$" |

### - T -

| | |
|---|---|
| tbl,trbl | trouble |
| tfc | traffic,messages |
| thr | there,their |
| tmw | tomorrow |
| tng | tuning,thing |
| tnk | think |
| tnsmsn | transmission |
| tr | transit,position,there,transmit/receive |
| T/R | transmit/receive |
| trix | tricks |
| tt,tts | that,that is |
| tu,tku,tnx,tks | thank you, thanks |
| tv,tvi | television,television interference |
| twx | telegram |
| tx,trans | transmitter |

### - U -

| | |
|---|---|
| u,up | you,upward in frequency |
| ufb | vfb,very fine business (Rus) |
| uk | United Kingdom |
| ul,ud | you will,you would |
| undld | undelivered |
| unhrd | unheard |
| ur,urs | your,yours |
| ut | universal time,GMT,"Zebra" time |

### - V -

| | |
|---|---|
| va | signing off (same as sk) |
| vert | vertical |
| vfb | very fine business |
| vfo | variable-frequency oscillator |
| vjo | viejo (Sp),old man |
| vox | voice-operated switch |
| vy,vri | very |
| vxo | variable crystal oscillator |

### - W -

| | |
|---|---|
| w,wt | watt |
| wa | word after |
| wat,watsa | what,what do you say? |
| wb | word before |
| wd | word,would |
| wee | who? |
| wed | we would |
| wh | white |
| wid | with |
| wilco | will comply,will do |
| wk,wkg | week, weak, work, working, QSOing |
| wri | worry |
| wx,wea | weather |

### - X -

| | |
|---|---|
| xtl | crystal |
| xtr,xmtr | transmitter |
| xq | fill, or repeat of unreceived copy |

### - Y -

| | |
|---|---|
| yda | yesterday |
| yl,xyl | young lady,married young lady |
| yr | year,your |

### - Z -

| | |
|---|---|
| z | Greenwich Mean Time, UT, "zebra" |
| zedder | New Zealander |
| zi | zone of the interior (continental USA) |
| zilch | nothing |

**NUMBER CODE:**

| | | | |
|---|---|---|---|
| 1 - a | | 6 - 6 | |
| 2 - u | | 7 - b | |
| 3 - v | | 8 - d | |
| 4 - 4 | | 9 - n | |
| 5 - e | | 0 - t | |

| | |
|---|---|
| 73 | best wishes |
| 88 | love and kisses |

W3AFM

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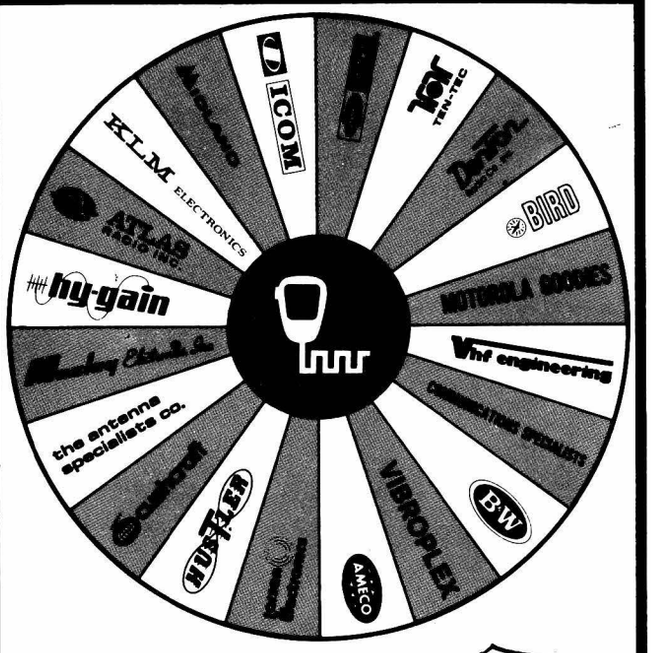


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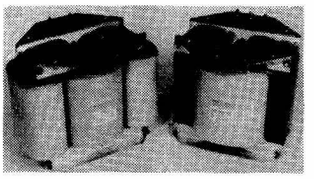

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# SPECIAL ARRL QN SIGNALS FOR NET USE

| | |
|---|---|
| QNA* | Answer in prearranged order. |
| QNB* | Act as relay Between . . . . . and . . . . . |
| QNC | All net stations Copy.<br>I have a message for all net stations. |
| QND* | Net is Directed (controlled by net control station). |
| QNE* | Entire net please stand by. |
| QNF | Net is Free (not controlled). |
| QNG | Take over as net control station. |
| QNH | Your net frequency is High. |
| QNI | Net stations report In.*<br>I am reporting into the net. |
| QNJ | Can you copy me? Can you copy . . . . . ? |
| QNK* | Transmit messages for . . . . . to . . . . . |
| QNL | Your net frequency is Low. |
| QNM* | You are QRMing the net. Please stand by. |
| QNN | Net control station is . . . . . *<br>What station has net control? |
| QNO | Station is leaving the net. |
| QNP | Unable to copy you (or . . . . . ). |
| QNQ* | Move frequency to . . . and wait for . . . to finish handling traffic. Then send him traffic for . . . . . |
| QNR* | Answer . . . and Relay (or Receive) traffic. |
| QNS | Following Stations are in the net.* (Follow with list).<br>Request list of stations in the net. |
| QNT | Leaving net Temporarily (or for . . . minutes). |
| QNU* | The net has traffic for YOU. Stand by. |
| QNV* | Establish contact with . . . . . on this frequency.<br>If successful, move to . . . and send him traffic for . . . |
| QNW | How do I route messages for . . . . . ? |
| QNX | You are excused from the net.*<br>Request to be excused from the net. |
| QNY* | Shift to another frequency (or to . . . kc.)<br>to clear traffic with . . . . . |
| QNZ | Zero beat your signal with mine. |

*For use only by Net Control Station

Notes on the Use of QN Signals

1. The QN signals listed above are special ARRL signals for use in amateur c.w.nets only. Other meanings that may be used in other services do not apply.

2. Some QN signals are for use by net control stations only; these are marked with an asterisk (*). Others have slightly different meanings when used by the NCS and net stations; in this case, the meaning when used by the NCS is marked with an asterisk (*

3. Some QN signals have two meanings, the difference depending on how or by whom used. Examples: (a) QNC, when used as a preface to transmission of a message, carries its first meaning; when used by a station reporting into the net (e.g.,W9NCS DE W9NET QNI QNC), it carries its second meaning. (b) QNI, when used by the NCS, is a request for stations to report in; when used by a net station, it means that this station is reporting in. (c) QNJ, when used alone, carries its first meaning; when followed by a call, it carries the second meaning.

4. QN signals are never followed by a question mark, even though the meaning may be interrogatory.

5. Do not use QN signals on phone nets. Say it with words.

6. Use QN signals in nets only. They are not for use in casual amateur conversation.

7. Make frequent use of standard international "Q" signals in traffic nets, for meanings not covered by QN signals. Examples: QRU, QRV, QSV, QTA, QTB, QTX, etc.

ARRL Communications Department

# ARRL Adopted ICAO Phonetic Alphabet

**(International Civil Aviation Organization)**

| | |
|---|---|
| **A** | ALFA |
| **B** | BRAVO |
| **C** | CHARLIE |
| **D** | DELTA |
| **E** | ECHO |
| **F** | FOXTROT |
| **G** | GOLF |
| **H** | HOTEL |
| **I** | INDIA |
| **J** | JULIETT |
| **K** | KILO |
| **L** | LIMA |
| **M** | MIKE |
| **N** | NOVEMBER |
| **O** | OSCAR |
| **P** | PAPA |
| **Q** | QUEBEC |
| **R** | ROMEO |
| **S** | SIERRA |
| **T** | TANGO |
| **U** | UNIFORM |
| **V** | VICTOR |
| **W** | WHISKEY |
| **X** | X-RAY |
| **Y** | YANKEE |
| **Z** | ZULU |

## ON GOOD PHONE OPERATING

1. ***Listen much . . . with care.*** **Avoid distractions in your operating room. Tune the band well after each call.**
2. ***Time your calls; monitor your own frequency.*** **Call only when a station is free.**
3. ***Make short calls, with breaks to listen.*** **Speak clearly, at a steady, modest rate. Three short calls are better than one long one.**
4. ***Use push-to-talk technique . . . speak near the mike.*** **Watch the modulation indicator. Keep local background noise at a minimum.**
5. ***Make notes. Avoid missing points for comment.*** **Jot down topics to avoid repeats.**
6. ***Talk in connected thoughts and phrases.*** **Notes will help avoid mixing up subjects. Push-to-talk technique will keep brother amateurs from calling you a monologuist.**
7. ***Speak naturally.*** **QSOs need not be cut and dried. Make them interesting. Avoid exhibitionism. Use proper operating form to promote efficiency in communication and add respect and prestige for your station.**

**Use of this standard list is recommended by ARRL. Haphazard selection of words often results in confusion. A degree of uniformity in use of phonetic words reflects favorably on your individual operating, and on the whole amateur service.**

*American Radio Relay League*
*225 Main Street*
*Newington, Conn. 06111*

## DX OPERATING CODE

(For W/VE Amateurs)

Some amateur DXers have caused considerable confusion and QRM in their efforts to work DX stations. The points below, if observed by all W/VE amateurs, will help make DX more enjoyable for all.

1. Call DX only after he calls CQ, QRZ? or signs SK, or 'phone equivalents thereof. Make your calls short.

2. Do not call a DX station:
   a. On the frequency of the station he is calling until you are sure the QSO is over (SK).
   b. Because you hear someone else calling him.
   c. When he signs KN, AR or CL.
   d. Exactly on his frequency.
   e. After he calls a directional CQ, unless of course you are in the right direction or area.

3. Keep within frequency band limits. Some DX stations can get away with working outside, but you cannot.

4. Observe calling instructions given by DX stations. Example: "15U" means "call 15 kc. up from my frequency". "15D" means down, etc.

5. Give honest reports. Many DX stations depend on W/VE reports for adjustment of station and equipment.

6. Keep your signal clean. Key clicks, ripple, feedback or splatter give you a bad reputation and may get you a citation from FCC.

7. Listen and call the station you want. Calling CQ DX is not the best assurance that the rare DX will reply.

8. When there are several W or VE stations waiting, avoid asking DX to "listen for a friend". Also avoid engaging him in a rag chew against his wishes.

(For Overseas Amateurs)

To all overseas amateur stations:

In their eagerness to work you, many W and VE amateurs resort to practices which cause confusion and QRM. Most of this is good-intentioned but ill-advised; some of it is intentional and selfish. The key to the cessation of unethical DX operating practices is in your hands. We believe that your adoption of certain operating habits will increase your enjoyment of amateur radio and that of amateurs on this side who are eager to work you. We recommend your adoption of the following principles:

1. Do not answer calls on your own frequency.

2. Answer calls from W/VE stations only when their signals are of good quality.

3. Refuse to answer calls from other stations when you are already in contact with someone, and do not acknowledge calls from amateurs who indicate they wish to be "next".

4. Give everybody a break. When many W/VE amateurs are patiently and quietly waiting to work you, avoid complying with requests to "listen for a friend".

5. Tell listeners where to call you by indicating how many kilocycles up (U) or down (D) from your frequency you are listening. Examples: c.w. - "CQ DX CQ DX CQ DX 15U DE AC4YN AC4YN AC4YN 15U K"; 'phone - "Answer 15 kilocycles up from my frequency".

6. Use the ARRL-recommended ending signals, especially KN, to indicate to impatient listeners the status of the QSO. (KN means "Go ahead (specific station), all others keep out".

7. Let it be known that you avoid working amateurs who are constant violators of the above principles.

ARRL Communications Department


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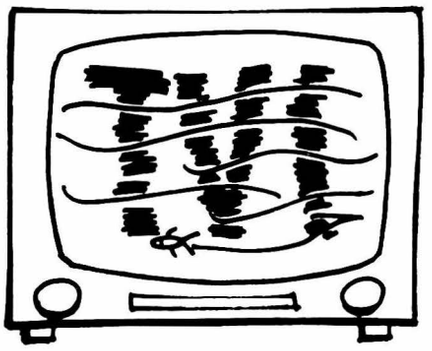
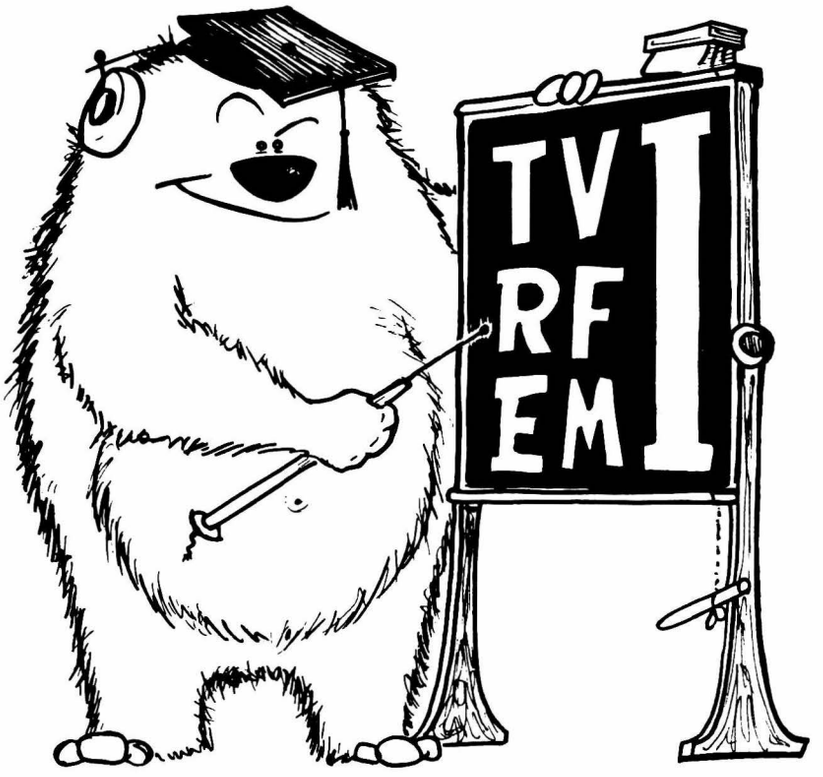
# CENSUS OF AMATEUR RADIO LICENSES OF THE WORLD*

| PREFIX | COUNTRY | NUMBER OF RADIO AMATEUR LICENSES LISTED |
|---|---|---|
| AC3 | SIKKIM | 1 |
| AP | PAKISTAN | 44 |
| AP,S2 | BANGLADESH | 9 |
| A2 | BOTSWANA | 37 |
| A4X | SULTANATE OF OMAN | 24 |
| A6X | UNITED ARAB EMIRATES | 16 |
| A7X | QATAR | 1 |
| A9X | BAHRAIN | 23 |
| A35 | TONGA | 1 |
| A51 | BHUTAN | 2 |
| BV2 | TAIWAN (FORMOSA) | 2 |
| CE | CHILE | 2,775 |
| CM,CO | CUBA | 469 |
| CN | MOROCCO | 103 |
| CP | BOLIVIA | 919 |
| CR3 | PORTUGUESE GUINEA | 1 |
| CR9 | MACAO | 2 |
| CT1 | PORTUGAL | 739 |
| CT2 | AZORES IS | 25 |
| CT3 | MADEIRA IS | 35 |
| CX | URUGUAY | 2,490 |
| C5A | THE GAMBIA | 16 |
| C6A | BAHAMA IS | 55 |
| C9M | MOZAMBIQUE | 133 |
| C21 | REPUBLIC OF NAURU | 7 |
| C31 | ANDORRA | 92 |
| DA-DL | FED REP OF GERMANY | 25,661 |
| DM | E GERMAN DEMOCRATIC REP | 3,289 |
| DU | PHILIPPINES | 540 |
| D2A | ANGOLA | 491 |
| D4 | REP OF CAPE VERDI | 4 |
| EA | SPAIN | 2,813 |
| EA6 | BALEARIC IS | 83 |
| EA8 | CANARY IS | 295 |
| EA9 | SPANISH SAHARA,IFNI, CEUTA Y MELILLA | 28 |
| EI | IRELAND | 505 |
| EL,5L | LIBERIA | 79 |
| EP | IRAN | 82 |
| ET3 | ETHIOPIA | 5 |
| F | FRANCE | 9,142 |
| FB8 | AMSTERDAM,ST PAUL,CROZET, KERGUELEN,TROMELIN IS | 16 |
| FC | CORSICA | 51 |
| FG7 | GUADELOUPE | 42 |
| FH8 | COMORO IS | 4 |
| FK8 | NEW CALEDONIA | 42 |
| FL8 | TERR. OF AFARS & ISSAS | 29 |
| FM7 | MARTINIQUE | 47 |
| FO8 | FRENCH POLYNESIA | 66 |
| FP8 | ST. PIERRE & MIQUELON IS | 28 |
| FR7 | REUNION IS | 45 |
| FU8,YJ | NEW HEBRIDES | 26 |
| FW8 | WALLIS & FUTUNA IS | 2 |
| FY7 | FRENCH GUIANA | 32 |
| G | ENGLAND | 20,102 |
| GC | CHANNEL IS | 118 |
| GD | ISLE OF MAN | 56 |
| GI | NORTHERN IRELAND | 446 |
| GM | SCOTLAND | 1,314 |
| GW | WALES | 935 |
| HA,HG | HUNGARY | 675 |
| HB | SWITZERLAND | 1,725 |
| HBØ | LIECHTENSTEIN | 4 |
| HC | ECUADOR | 767 |
| HC8 | GALAPAGOS IS | 7 |
| HH | HAITI | 2 |
| HI | DOMINICAN REPUBLIC | 960 |
| HK | COLOMBIA | 2,444 |
| HKØ | BAJO NUEVO IS | 1 |
| HKØ | MALPELO IS | 1 |
| HKØ | S ANDRES,PROVIDENCIA IS | 25 |
| HM,HL | KOREA | 96 |
| HP | PANAMA | 389 |
| HR | HONDURAS | 207 |
| HS | THAILAND | 46 |
| HV | VATICAN CITY | 2 |
| HZ | SAUDI ARABIA | 3 |
| I | ITALY | 10,222 |
| IA5 | TUSCAN ARCHIPELAGO | 2 |
| IC8 | CAPRI & ISCHIA IS | 30 |
| IG9 | LAMPEDUSA IS | 5 |
| IH9 | PANTELLERIA IS | 2 |
| IMØ | MADDALENA IS | 1 |
| IS | SARDINIA | 230 |
| IT | SICILY | 554 |
| JA-JR | JAPAN | 19,190 |
| JD1 | OGASAWARA, MINAMI-TORI-SHIMA IS | 251 |
| JT1 | MONGOLIA | 23 |
| JW | SVALBARD IS | 6 |
| JX | JAN MAYEN IS | 11 |
| JY | JORDAN | 218 |
| K,W | U.S.A.(48 STATES) | 299,211 |
| KA | U.S.PERSONNEL IN JAPAN | 108 |
| KB6 | BAKER,CANTON,ENDERBURY, HOWLAND & PHOENIX IS | 7 |
| KC4 | NAVASSA IS | 1 |
| KC4AA,US | ANTARCTICA | 14 |
| KC6 | CAROLINE IS | 23 |
| KG4 | GUANTANAMO BAY,CUBA | 22 |
| KG6 | MARIANA IS | 161 |
| KH6 | HAWAII | 1,392 |
| KJ6 | JOHNSTON IS | 10 |
| KL7 | ALASKA | 1,144 |
| KM6 | MIDWAY IS | 17 |
| KP4 | PUERTO RICO | 1114 |
| KP6 | JARVIS & PALMYRA IS | 4 |
| KS6 | AMERICAN SAMOA | 24 |
| KV4 | VIRGIN IS | 101 |
| KW6 | WAKE IS | 10 |
| KX6 | MARSHALL IS | 40 |
| KZ5 | CANAL ZONE | 187 |
| LA-LJ | NORWAY | 3,993 |
| LU | ARGENTINA | 21,808 |
| LX | LUXEMBOURG | 149 |
| LZ | BULGARIA | 719 |
| M1 | SAN MARINO | 6 |
| OA | PERU | 1,679 |
| OD5 | LEBANON | 143 |
| OE | AUSTRIA | 1,914 |
| OH | FINLAND | 2,855 |
| OHØ | ALAND IS | 26 |
| OJØ,OHØM | MARKET REEF | 2 |
| OK,OL | CZECHOSLOVAKIA | 3,041 |
| ON | BELGIUM | 2,000 |
| OX | GREENLAND | 90 |
| OY | FAEROES IS | 78 |
| OZ | DENMARK | 3,607 |
| PA,PE,PI | NETHERLANDS | 4,846 |
| PJ | NETHERLANDS ANTILLES | 129 |
| PP,PY | BRAZIL | 16,001 |
| PYØ | FERNANDO DE NORONHA IS | 14 |
| PYØ | TRINDADE & MARTIM VAZ | 1 |
| PZ | SURINAM | 53 |
| P29 | PAPUA NEW GUINEA | 86 |
| SJ-SM | SWEDEN | 6,263 |
| SP | POLAND | 5,720 |
| ST | SUDAN | 2 |
| SU | EGYPT | 7 |
| SV | GREECE,CRETE | 235 |
| TA,TC | TURKEY | 2 |
| TF | ICELAND | 68 |
| TG | GUATEMALA | 307 |
| TI | COSTA RICA | 673 |
| TI9 | COCOS IS | 5 |
| TJ | CAMEROON | 20 |
| TL8 | CENTRAL AFRICAN REP | 1 |
| TN8 | REP OF CONGO(BRAZZAVILLE) | 6 |
| TR8 | GABON | 19 |
| TT8 | CHAD | 4 |
| TU2 | IVORY COAST | 97 |
| TY | PEOPLE'S REP OF BENIN | 1 |
| U | SOVIET UNION | 16,997 |
| VE | CANADA | 16,218 |
| VK | AUSTRALIA | 6,950 |
| VO1 | NEWFOUNDLAND | 324 |
| VO2 | LABRADOR | 39 |
| VP1 | BELIZE(BRITISH HONDURAS) | 44 |
| VP2 | LEEWARD-WINDWARD IS | 220 |
| VP5 | TURKS & CAICOS IS | 70 |
| VP8 | FALKLAND,SOUTH GEORGIA, S ORKNEY,SOUTH SANDWICH, SOUTH SHETLAND IS | 59 |
| VP9 | BERMUDA | 70 |
| VQ9 | SEYCHELLES IS | 28 |
| VR1 | BRITISH PHOENIX,GILBERT, OCEAN IS | 13 |
| VR3 | NORTHERN LINE IS | 7 |
| VR4 | SOLOMON IS | 11 |
| VR6 | PITCAIRN IS | 1 |
| VR7 | CNTRL & SOUTHERN LINE IS | 2 |
| VR8 | TUVALU IS | 5 |
| VS5 | BRUNEI | 10 |
| VS6 | HONG KONG | 45 |
| VU | INDIA | 856 |
| W,K | U.S.A. (SEE K,W) | |
| XE,XF | MEXICO | 1,295 |
| XT2 | VOLTAIC REPUBLIC | 12 |
| XZ | BURMA | 16 |
| YB-JD | INDONESIA | 1,884 |
| YK | SYRIA | 10 |
| YN | NICARAGUA | 540 |
| YO | ROMANIA | 1,634 |
| YS | EL SALVADOR | 311 |
| YU | YUGOSLAVIA | 2,904 |
| YV | VENEZUELA | 8,847 |
| ZB2 | GIBRALTAR | 15 |
| ZD7 | SAINT HELENA | 4 |
| ZD8 | ASCENSION IS | 13 |
| ZD9 | TRISTAN DA CUNHA, & GOUGH IS | 5 |
| ZE | RHODESIA | 187 |
| ZF1 | CAYMAN IS | 66 |
| ZK1 | COOK IS | 27 |
| ZK2 | NIUE IS | 1 |
| ZL | NEW ZEALAND | 5,035 |
| ZP | PARAGUAY | 592 |
| ZR,ZS | SOUTH AFRICA | 2,855 |
| ZR,ZS3 | SOUTH-WEST AFRICA | 64 |
| 3A | MONACO | 34 |
| 3B6 | AGALEGA | 2 |
| 3B7 | ST. BRANDON | 1 |
| 3B8 | MAURITIUS IS | 30 |
| 3B9 | RODRIGUES | 1 |
| 3D2 | FIJI IS | 28 |
| 3D6 | SWAZILAND | 20 |
| 3V8 | TUNISIA | 1 |
| 4S7 | SRI LANKA (CEYLON) | 61 |
| 4U | UNITED NATIONS,GENEVA | 1 |
| 4W1,3 | YEMEN | 1 |
| 4X4,4Z4 | ISRAEL | 750 |
| 5B4,ZC4 | CYPRUS | 69 |
| 5H3 | TANZANIA | 8 |
| 5N2 | NIGERIA | 6 |
| 5R8 | MADAGASCAR | 7 |
| 5T5 | MAURITANIA | 10 |
| 5U7 | NIGER | 9 |
| 5V | TOGO | 7 |
| 5W1 | WESTERN SAMOA | 15 |
| 5X5 | UGANDA | 2 |
| 5Z4 | KENYA | 65 |
| 6W8 | SENEGAL | 55 |
| 6Y5 | JAMAICA | 83 |
| 7J1 | OKINO-TORI-SHIMA | 1 |
| 7P8 | LESOTHO | 11 |
| 7Q7 | MALAWI | 14 |
| 7X | ALGERIA | 49 |
| 8P6 | BARBADOS IS | 129 |
| 8Q6,VS9 | MALDIVE IS | 27 |
| 8R | GUYANA | 28 |
| 9G1 | GHANA | 46 |
| 9H1,5 | MALTA | 83 |
| 9H4 | GOZO (MALTA) | 12 |
| 9I,9J | ZAMBIA | 42 |
| 9K2 | KUWAIT | 108 |
| 9L | SIERRA LEONE | 8 |
| 9M2 | WEST MALAYSIA | 104 |
| 9M6 | SABAH | 6 |
| 9M8 | SARAWAK | 8 |
| 9N1 | NEPAL | 2 |
| 9V1 | REP OF SINGAPORE | 43 |
| 9X | RWANDA | 24 |
| 9Y4 | TRINIDAD & TOBAGO IS | 91 |

*FROM THE 1977 RADIO AMATEUR CALLBOOK MAGAZINES. ABSENCE OF PREFIX AND COUNTRY INDICATES EITHER THAT NO LICENSES HAVE BEEN ISSUED OR HAVE NOT BEEN OBTAINABLE FROM OFFICIAL SOURCES.



# A properly designed filter can tame the beast...



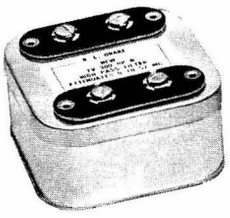

## Whatever you call it, the common denominator is "I" for Interference.

The study of interference to consumer products such as TV sets, hi-fis, and the like from radio transmitters is a complex subject. For a primer, see p. 11, "QST Magazine" for March, 1976. We do know that radiation interference can be greatly reduced and perhaps eliminated by the use of a well-engineered, quality-built TVI filter. The low-pass type for the transmitter is at times not enough...a high-pass type for the TV set may also be required. But, here's the rub! If a filter is not properly designed and engineered, it may not work like a filter at all. At the R. L. Drake Company, we've been designing and building filters for over 30 years...since before the days of "Uncle Miltie." And, these are real filters...not toys.

For your TVI answer, choose one or more of the following:

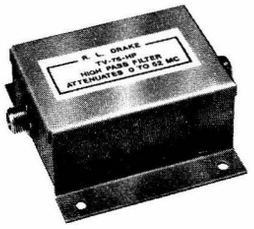
## High Pass Filters for TV Sets...

provide more than 40 dB attenuation at 52 MHz and lower. Protect the TV set from amateur transmitters 6-160 meters.



### TV-300-HP

For 300 ohm twin lead



### TV-75-HP

For 75 ohm TV coaxial cable; TV type connectors installed

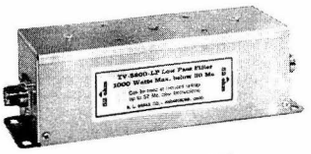
DRAKE

## Low Pass Filters for Transmitters

have four pi sections for sharp cut off below channel 2, and to attenuate transmitter harmonics falling in any TV channel and FM band. 52 ohm. SO-239 connectors built in.

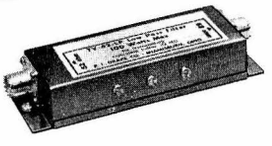
### TV-3300-LP

1000 watts max. below 30 MHz. Attenuation better than 80 dB above 41 MHz. Helps TV i-f interference, as well as TV front-end problems.



### TV-5200-LP

200 watts to 52 MHz. Ideal for six meters. For operation below six meters, use TV-3300-LP or TV-42-LP.



### TV-42-LP

is a four section filter designed with 43.2 MHz cut-off and extremely high attenuation in all TV channels for transmitters operating at 30 MHz and lower. Rated 100 watts input.

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# A. R. R. L. Countries List

The ARRL Postwar Countries List is the official standard used in connection with the DX Century Club. To qualify for the DX Century Club Award, an applicant must submit confirmations from at least 100 different countries contacted after November 15, 1945, in accordance with the Postwar DXCC Rules. Copies of the DXCC Rules will be furnished by ARRL on request.

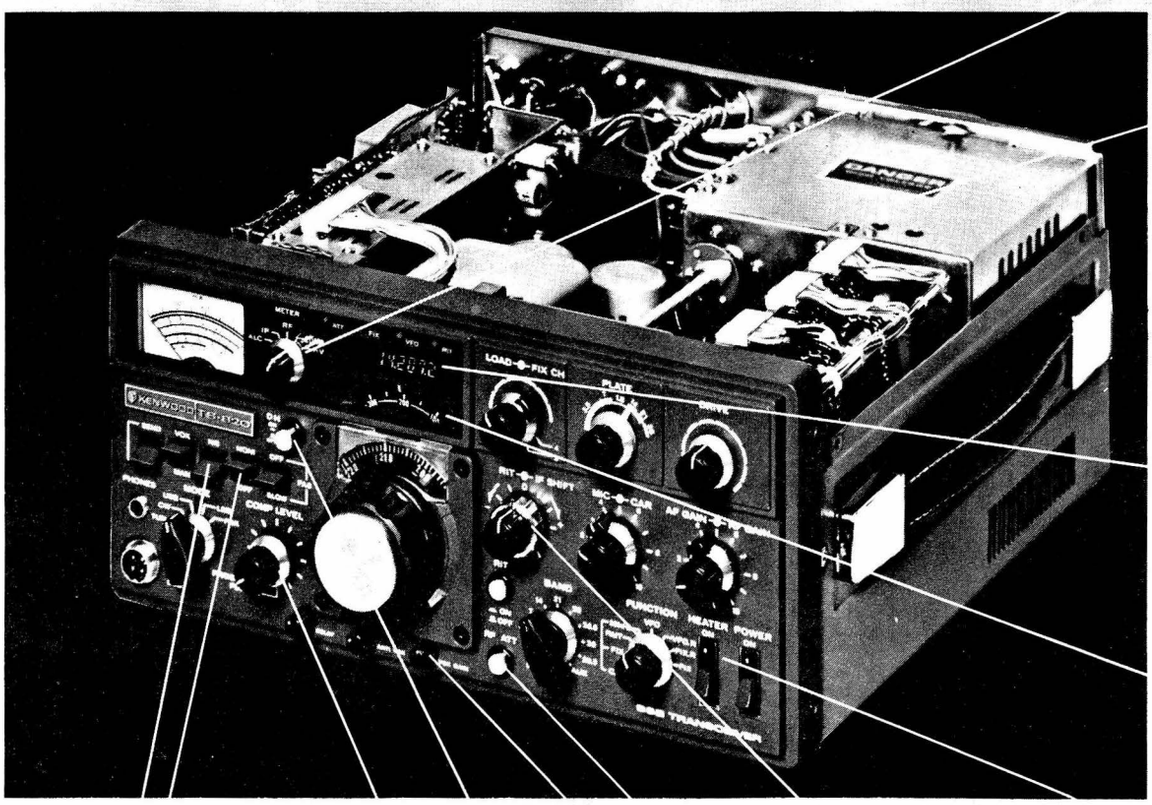
A2.....BOTSWANA
A3.....TONGA IS.
A4.....OMAN
A5.....BHUTAN
A6.....UNITED ARAB EMIRATES
A7.....QATAR
A9.....BAHREIN
AP.....PAKISTAN
BV.....FORMOSA
BY.....CHINA
C2.....REP.OF NAURU
C3.....ANDORRA
C5.....THE GAMBIA
C6.....BAHAMA IS.
C9.....MOZAMBIQUE
CE.....CHILE
CE9AA-AM,FB8Y,KC4,LA,LU-Z,OR4,UA1,UK1,
VK0,VP8,ZL5,ZS1,3Y,4K,8J.....ANTARCTICA
CE9AN-AZ (SEE VP8)
CEOA.....EASTER IS.
CEOX.....SAN FELIX
CEOZ.....JUAN FERNANDEZ
CM,CO.....CUBA
CN.....MOROCCO
CP.....BOLIVIA
CR3.....GUINE BISSAU
CR5.....PRINCIPE,SAO THOME
CR9.....MACAO
CT.....PORTUGAL
CT2.....AZORES
CT3.....MADEIRA IS.
CX.....URUGUAY
*DA,DJ,DK,DL.....FEDERAL REPUBLIC OF GERMANY
*DM,DT.....GERMAN DEMOCRATIC REPUBLIC
DU.....PHILIPPINE IS.
D2,D3.....ANGOLA
D4.....CAPE VERDE IS.
EA.....SPAIN
EA6.....BALEARIC IS.
EA8.....CANARY IS.
EA9.....RIO DE ORO
EA9.....CEUTA AND MELILLA
EI.....REPUBLIC OF IRELAND
EL.....LIBERIA
EP.....IRAN
ET.....ETHIOPIA
F.....FRANCE
FB8W.....CROZET
FB8X.....KERGUELEN IS.
FB8Y (SEE CE9AA-AM)
FB8Z.....AMSTERDAM & ST.PAUL IS.
*FC.....CORSICA
FG.....GUADELOUPE
FH.....COMORO IS.
FK.....NEW CALEDONIA
FL.....AFARS & ISSAS TERR
FM.....MARTINIQUE
FO.....CLIPPERTON IS.
FO.....FR POLYNESIA
FP.....ST.PIERRE & MIQUELON
*FR.....GLORIOSO IS.
*FR.....JUAN DE NOVA,EUROPA
FR.....REUNION
FR.....TROMELIN
*FS.....SAINT MARTIN
FW.....WALLIS & FUTUNA IS.
FY.....FRENCH GUIANA
G.....ENGLAND
GC.....GUERNSEY & DEPENDENCIES
GC.....JERSEY
GD.....ISLE OF MAN
GI.....NORTHERN IRELAND
GM.....SCOTLAND
GW.....WALES
HA.....HUNGARY
HB.....SWITZERLAND
HBO.....LIECHTENSTEIN
HC.....ECUADOR
HC8.....GALAPAGOS IS.
HH.....HAITI
HI.....DOMINICAN REPUBLIC
HK.....COLOMBIA
HKO.....BAJO NUEVO
HKO.....MALPELO IS.
HKO.....SAN ANDRES & PROVIDENCIA
HKO (SEE KS4)
HL,HM.....KOREA
HP.....PANAMA
HR.....HONDURAS
HS.....THAILAND
HV.....VATICAN
HZ,7Z.....SAUDI ARABIA
I,IT.....ITALY
IS.....SARDINIA
JA,JE,JG,JH,JR,KA.....JAPAN
*JD,KA1.....OGASAWARA
*JD1.....OKINO TORI-SHIMA
*JD,KA1.....MINAMI TORISHIMA
JT.....MONGOLIA
JW.....SVALBARD
JX.....JAN MAYEN
JY.....JORDAN
K,W.....UNITED STATES OF AMERICA
KA (SEE JA)
KA1 (SEE JD)
KB.....BAKER,HOWLAND & AMERICAN PHOENIX IS.
KC4 (SEE CE9AA-AM)
KC4.....NAVASSA IS.
KC6.....EASTERN CAROLINE IS.
KC6.....WESTERN CAROLINE IS.
KG4.....GUANTANAMO BAY
KG6.....GUAM
KG6R,S,T.....MARIANA IS.
KH.....HAWAIIAN IS.
KH.....KURE IS.
KJ.....JOHNSTON IS.
VQ9.....FARQUHAR
VQ9.....SEYCHELLES
VR1.....BRITISH PHOENIX IS.
VR1.....GILBERT & OCEAN IS.
VR3,7.....LINE IS.
VR4.....SOLOMON IS.
VR6.....PITCAIRN IS.
VR7 (SEE VR3)
*VR8.....TUVALU
VS5.....BRUNEI
VS6.....HONG KONG
VS9 (SEE 8Q)
VS9K.....KAMARAN IS.
VU.....INDIA
VU7.....ANDAMAN & NICOBAR IS.
VU7.....LACCADIVE IS.
W (SEE K)
XE.....MEXICO
XF4.....REVILLA GIGEDO
XP (SEE OX)
*XT.....VOLTAIC REP.
XU.....KHMER REP.
XV.....VIETNAM
XW.....LAOS
XZ.....BURMA
YA.....AFGHANISTAN
*YB.....INDONESIA
YI.....IRAQ
YJ.....NEW HEBRIDES
YK.....SYRIA
YN.....NICARAGUA
YO.....RUMANIA
YS.....SALVADOR
YU.....YUGOSLAVIA
YV.....VENEZUELA
YVO.....AVES IS.
ZA.....ALBANIA
ZB.....GIBRALTAR
ZC (SEE 5B)
ZD7.....ST.HELENA
ZD8.....ASCENSION IS.
ZD9.....TRISTAN DA CUNHA & GOUGH IS.
ZE.....RHODESIA
ZF.....CAYMAN IS.
ZK1.....COOK IS.
ZK1.....MANIHIKI IS.
ZK2.....NIUE
ZL.....AUCKLAND IS. & CAMPBELL IS.
ZL.....CHATHAM IS.
ZL.....KERMADEC IS.
ZL.....NEW ZEALAND
ZL5 (SEE CE9AA-AM)
ZM.....TOKELAUS
ZP.....PARAGUAY
ZS1,2,4,5,6.....SOUTH AFRICA
ZS1 (SEE CE9AA-AM)
ZS2.....PRINCE EDWARD & MARION IS.
ZS3.....(NAMIBIA) SOUTHWEST AFRICA
*1S.....SPRATLY IS.
3A.....MONACO
3B6,7.....AGALEGA & ST.BRANDON
3B8.....MAURITIUS
3B9.....RODRIGUEZ IS.
3C.....EQUATORIAL GUINEA
3CO.....ANNOBON
3D2.....FIJI IS.
3D6.....SWAZILAND
3V.....TUNISIA
3X.....REP. OF GUINEA
3Y.....BOUVET
3Y (SEE CE9AA-AM)
4K (SEE CE9AA-AM)
4S.....SRI LANKA
4U.....I.T.U. GENEVA
4W.....YEMEN
4X,4Z.....ISRAEL
5A.....LIBYA
5B,ZC.....CYPRUS
5H.....TANZANIA
5N.....NIGERIA
5R.....MALAGASY REP.
*5T.....MAURITANIA
*5U.....NIGER REP.
5V.....TOGO REP.
5W.....WESTERN SAMOA
5X.....UGANDA
5Z.....KENYA
6O.....SOMALI REP.
*6W.....SENEGAL REP.
6Y.....JAMAICA
7O.....SOUTH YEMEN
7P.....LESOTHO
7Q.....MALAWI
7X.....ALGERIA
7Z (SEE HZ)
8J (SEE CE9AA-AM)
8P.....BARBADOS
8Q,VS9.....MALDIVE IS.
8R.....GUYANA
8Z4.....SAUDI ARABIA/IRAQ NEUTRAL ZONE
*9A,(M1).....SAN MARINO
*9G.....GHANA
9H.....MALTA
9J.....ZAMBIA
9K.....KUWAIT
9L.....SIERRA LEONE
*9M2.....WEST MALAYSIA
*9M6,8.....EAST MALAYSIA
9N.....NEPAL
9Q.....REP.OF ZAIRE
*9U.....BURUNDI
*9V.....SINGAPORE
*9X.....RWANDA
9Y.....TRINIDAD & TOBAGO
* ABU AIL; JABAL AT TAIR
* GEYSER REEF
KL.....ALASKA
KM.....MIDWAY IS.
KP4.....PUERTO RICO
KP6.....KINGMAN REEF
KP6.....PALMYRA,JARVIS IS.
KS4,HKO.....SERRANA BANK & RONCADOR CAY
KS6.....AMERICAN SAMOA
KV.....VIRGIN IS.
KW.....WAKE IS.
KX.....MARSHALL IS.
KZ.....CANAL ZONE
LA,LB,LF,LG,LJ.....NORWAY
LA (SEE CE9AA-AM)
LU.....ARGENTINA
LU-Z (SEE CE9AA-AM,VP8)
LX.....LUXEMBOURG
LZ.....BULGARIA
*M1 (SEE 9A)
OA.....PERU
OD.....LEBANON
OE.....AUSTRIA
OH.....FINLAND
OHO.....ALAND IS.
OJO.....MARKET
OK.....CZECHOSLOVAKIA
ON.....BELGIUM
OR4 (SEE CE9AA-AM)
OX,XP.....GREENLAND
OY.....FAROE IS.
OZ.....DENMARK
*P2.....PAPUA NEW GUINEA
PA,PD,PE,PI.....NETHERLANDS
PJ.....NETHERLAND ANTILLES
PJ.....ST.MAARTEN,SABA & ST.EUSTATIUS
PY.....BRAZIL
PYO.....FERNANDO DE NORONHA
PYO.....ST.PETER & ST.PAUL'S ROCKS
PYO.....TRINDADE & MARTIM VAZ IS.
PZ.....SURINAM
S2.....BANGLADESH
SK,SL,SM.....SWEDEN
SP.....POLAND
ST.....SUDAN
SU.....EGYPT
SV.....CRETE
SV.....DODECANESE
SV.....GREECE
SV.....MOUNT ATHOS
TA.....TURKEY
TF.....ICELAND
TG.....GUATEMALA
TI.....COSTA RICA
TI9.....COCOS IS.
TJ.....CAMEROUN
*TL.....CENTRAL AFRICAN REP.
*TN.....CONGO REP.
*TR.....GABON REP.
*TT.....CHAD REP.
*TU.....IVORY COAST
*TY.....DAHOMEY REP.
*TZ.....MALI REP.
UA,UK1,3,4,6,UV,UW1-6,UN1
.....EUROPEAN RUSSIAN S.F.S.R.
UA1,UK1.....FRANZ JOSEF LAND
UA1,UK1 (SEE CE9AA-AM)
UA2,UK2F.....KALININGRADSK
UA,UK,UV,UW9,O.....ASIATIC R.S.F.S.R.
UB,UK,UT,UY5.....UKRAINE
UC2,UK2A/C/I/L/O/S/W.....WHITE R.S.S.R.
UD6,UK6C/D/K.....AZERBAIJAN
UF6,UK6F/O/Q/V.....GEORGIA
UG6,UK6G.....ARMENIA
UH8,UK8H.....TURKOMAN
UI8,UK8.....UZBEK
UJ8,UK8J/R.....TADZHIK
UL7,UK7.....KAZAKH
UM8,UK8M,N.....KIRGHIZ
UO5,UK5O.....MOLDAVIA
UP2,UK2B/P.....LITHUANIA
UQ2,UK2G/Q.....LATVIA
UR2,UK2R/T.....ESTONIA
VE,VO.....CANADA
VE1.....SABLE IS.
VE1.....ST.PAUL IS.
VK.....AUSTRALIA
VK.....LORD HOWE IS.
VK9.....WILLIS IS.
VK9.....CHRISTMAS IS.
VK9.....COCOS IS.
VK9.....MELLISH REEF
VK9.....NORFOLK IS.
VKO (SEE CE9AA-AM)
VKO.....HEARD IS.
VKO.....MACQUARIE IS.
VO (SEE VE)
VP1.....BELIZE
*VP2E.....ANGUILLA
*VP2A.....ANTIGUA,BARBUDA
*VP2V.....BRITISH VIRGIN IS.
*VP2D.....DOMINICA
*VP2G.....GRENADA & DEPENDENCIES
*VP2M.....MONTSERRAT
*VP2K.....ST.KITTS,NEVIS
*VP2L.....ST.LUCIA
*VP2S.....ST.VINCENT & DEPENDENCIES
VP5.....TURKS & CAICOS IS.
VP8 (SEE CE9AA-AM)
VP8.....FALKLAND IS.
VP8,LU-Z.....SO.GEORGIA IS.
VP8,LU-Z.....SO.ORKNEY IS.
VP8,LU-Z.....SO.SANDWICH IS.
VP8,LU-Z,CE9AN-AZ.....SO.SHETLAND IS.
VP9.....BERMUDA IS.
VQ9.....ALDABRA
VQ9.....CHAGOS IS.
VQ9.....DESROCHES

*Consult current ARRL Operating Aid 7 for applicable footnote. Available free by request to ARRL Communications Dep't, 225 Main Street, Newington, Conn. 06111.

# KENWOOD'S TS-820 *the Pacesetter*

**Kenwood's well deserved reputation for fine craftsmanship and superb performance has never been more evident than in the TS-820. As a result of a host of innovative features being brought together, the 820 offers a degree of versatility, performance and pleasure second to none.**

**The Kenwood TS-820 is destined to be the world's new standard of excellence in amateur radio for years to come . . . a true "Pacesetter".**



**NOISE BLANKER** • The TS-820 uses an efficient noise blanker circuit, another Kenwood exclusive. A special crystal filter assures unsurpassed efficiency in eliminating unwanted pulse noises.

**RF MONITOR** • Built-in monitor circuit allows you to hear your own voice by sampling the RF signal. Especially useful for adjusting the RF Processor.

**HIGH STABILITY VFO** • The VFO, heart of any SSB transceiver, is an exclusive Kenwood design using FET technology.

**DIGITAL HOLD** • A single pushbutton switch offers the operator unprecedented versatility. The digital hold circuit will lock the counter and display at any frequency, but will allow the VFO to tune normally. Ever wanted to return to a certain spot on the band and forgotten the frequency? That won't happen again with the new digital hold feature on the Kenwood TS-820.

**SPEECH PROCESSOR** • An HF circuit provides quick time constant compression using a true RF compressor as opposed to an IF clipper. Amount of compression is adjustable to the desired level by a convenient front panel control.

**IF SHIFT** • The IF SHIFT control varies the IF passband without changing the receive frequency. This "IF shift" control is located on the front panel and provides excellent unwanted signal reject control or "pass band tuning." The 820 moves the signal across the IF pass band not the pass band across the signal.

**RF ATTENUATOR** • Easy, one touch activation of the attenuator supplies 20 dB of padding on receive.

**VOX** • A voice-activated microphone circuit is built into the TS-820 with VOX GAIN, ANTIVOX, and VOX DELAY controls placed on the front panel for convenient adjustment any time.

## *Features*

**PLL** • The TS-820 employs the latest phase lock loop circuitry. The single conversion receiver section performance offers superb protection against unwanted cross-modulation. And now, PLL allows the frequency to remain the same when switching sidebands (USB, LSB, CW) and eliminates having to recalibrate each time.

**FULL METERING** • During receive, an easy to read meter functions as an S-meter. The same meter displays ALC level, plate current, RF output, and plate voltage during transmit. Includes COMP setting for adjusting the compression level of the built-in speech processor.

**FINAL AMPLIFIER** • The TS-820 is completely solid state except for the driver (12BY7A) and the final tubes. Rather than substitute TV sweep tubes as final amplifier tubes in a state of the art amateur transceiver, Kenwood has employed two husky S-2001A (equivalent to 6146B) tubes. These rugged, time-proven tubes are known for their long life and superb linearity. The input power of the TS-820 is conservatively rated at 160 W DC, 200 W PEP. Tubes run cool with the aid of a noiseless fan (standard) mounted on the rear panel. The above tube and power combination minimizes the possibilities of TVI and helps to maintain the Kenwood reputation for excellent audio quality.

**DIGITAL READOUT DG-1** • (optional) A digital counter display can be employed as an integral part of the VFO readout system. Counter mixes the carrier, VFO, and first heterodyne frequencies to give *exact* frequency. Figures the frequency down to 10 Hz and digital display reads out to 100 Hz. Both receive and transmit frequencies are displayed in easy to read, Kenwood Blue digits.

**DRS DIAL** • Includes the same satin-smooth planetary drive found on other fine Kenwood models plus special, high-precision gears to add a new "monoscale" feature for easier frequency readout. LSB, USB, and CW operating frequencies can be accurately read from the same pointer.

**HEATER SWITCH** • The filaments of the three vacuum tubes may be turned off during periods of "receive only".

**CW AUDIO CHARACTERISTICS** • During CW reception, a special filter is used to alter the audio frequency response to provide a more comfortable, easy to copy tone.

Other features include:
- Built-in 25 kHz calibrator*
- Built-in speaker*
- CW Sidetone and semi-break in*
- Rear panel terminals for linear amplifier, IF OUT, RTTY, and XVTR.
- Handy phone patch IN and OUT terminals*

*Also available, the VFO-820 . . . the perfect companion to the TS-820.

TRIO-KENWOOD COMMUNICATIONS INC.
116 EAST ALONDRA/GARDENA, CA 90248

KENWOOD
. . . *pacesetter in amateur radio*

# INTERNATIONAL RADIO AMATEUR PREFIXES

The following prefixes are listed in alphabetical order for convenience in locating the country when DX calls are heard.

AC3.....SIKKIM
AC4.....TIBET
AP.....PAKISTAN
A2C.....BOTSWANA
A35.....TONGA
A4X.....SULTANATE OF OMAN
A51.....BHUTAN
A6X.....UNITED ARAB EMIRATES
A7X.....QATAR
A9X.....BAHRAIN

BV.....TAIWAN
BY.....PEOPLES REPUBLIC OF CHINA

CE.....CHILE
CE9AA-AM.....CHILEAN ANTARCTICA
TIERRA DE O'HIGGINS,PALMER PENINSULA, GRAHAM LAND
CE9AN-AZ.....SOUTH SHETLAND IS.
CEØA.....EASTER IS.
CEØX.....SAN FELIX IS.
CEØZ.....JUAN FERNANDEZ IS.
CM,CO.....CUBA
CN.....MOROCCO
CP.....BOLIVIA
CR3.....PORTUGUESE GUINEA
CR5.....SAO TOME & PRINCIPE IS.
CR8.....TIMOR IS.
CR9.....MACAO
CT1.....PORTUGAL
CT2.....AZORES IS.
CT3.....MADEIRA IS.
CX.....URUGUAY
C5A.....GAMBIA
C6A.....BAHAMA IS.
C9M.....MOZAMBIQUE
C21.....REPUBLIC OF NAURU
C31.....ANDORRA

DA-DL.....FED REP OF WEST GERMANY
DM.....EAST GERMAN DEMOCRATIC REP.
DU.....PHILIPPINES
D2A.....ANGOLA
D4.....REP OF CAPE VERDE

EA.....SPAIN
EA6.....BALEARIC IS.
EA8.....CANARY IS.
EA9.....SPANISH SAHARA,CEUTA Y MELILLA
EI.....IRELAND
EL,5L.....LIBERIA
EP.....IRAN
ET3.....ETHIOPIA

F.....FRANCE
FB8W.....CROZET IS.
FB8X.....KERGUELEN IS.
FB8Y.....ANTARCTICA
FB8Z.....AMSTERDAM & ST.PAUL IS.
FC.....CORSICA
FG7.....GUADELOUPE
FH8.....COMORO IS.
FK8.....NEW CALEDONIA
FL8.....AFARS AND ISSAS
FM7.....MARTINIQUE
FO8.....FRENCH POLYNESIA,CLIPPERTON IS.
FP8.....ST.PIERRE & MIQUELON IS.
FR7.....GLORIOSO,JUAN DE NOVA,REUNION, TROMELIN IS.
FS7.....ST. MARTIN IS.
FU8.....NEW HEBRIDES
FW8.....WALLIS & FUTUNA IS.
FY7.....FRENCH GUIANA

G.....ENGLAND
GC.....CHANNEL IS.
GD.....ISLE OF MAN
GI.....NORTHERN IRELAND
GM.....SCOTLAND
GW.....WALES

HA,HG.....HUNGARY
HB.....SWITZERLAND
HBØ.....LIECHTENSTEIN
HC.....ECUADOR
HC8.....GALAPAGOS IS.
HH.....HAITI
HI.....DOMINICAN REPUBLIC
HK.....COLOMBIA
HKØ.....BAJO NUEVO,MALPELO,SAN ANDRES & PROVIDENCIA IS.
HKØ.....SERRANA BANK & RONCADOR CAY
HM,HL9.....KOREA
HP.....PANAMA
HR.....HONDURAS
HRØ.....SWAN IS.
HS.....THAILAND
HV.....VATICAN CITY
HZ,7Z.....SAUDI ARABIA

I, IW.....ITALY
IA.....TUSCAN ARCHIPELAGO
IC.....CAPRI & ISCHIA IS.
IG9.....LAMPEDUSA IS.
IH.....PANTELLERIA IS.
IM.....MADDALENA IS.
IS.....SARDINIA
IT.....SICILY

JA-JR.....JAPAN
JD1.....OGASAWARA,MINAMI-TORI-SHIMA IS.
JR6.....OKINAWA (RYUKYU IS.)
JT1.....MONGOLIA
JW.....SVALBARD IS.
JX.....JAN MAYEN IS.
JY.....JORDAN

K.....UNITED STATES OF AMERICA
KA.....U.S.PERSONNEL IN JAPAN
KB6.....BAKER,CANTON,ENDERBURY, HOWLAND & PHOENIX IS.
KC4.....NAVASSA IS.
KC4AA,KC4US.....ANTARCTICA
KC6.....CAROLINE IS.
KG4.....GUANTANAMO BAY
KG6.....MARIANA IS.
KG6R.....ROTA
KG6S.....SAIPAN
KH6.....HAWAII & KURE IS.
KJ6.....JOHNSTON IS.
KL7.....ALASKA
KM6.....MIDWAY IS.
KP4.....PUERTO RICO
KP6.....JARVIS & PALMYRA IS.
KS6.....AMERICAN SAMOA
KV4.....VIRGIN IS.
KW6.....WAKE IS.
KX6.....MARSHALL IS.
KZ5.....CANAL ZONE

LA-LJ.....NORWAY
LU.....ARGENTINA
LU-Z.....ANTARCTICA
LX.....LUXEMBOURG
LZ.....BULGARIA

M1.....SAN MARINO

OA.....PERU
OD5.....LEBANON
OE.....AUSTRIA
OH.....FINLAND
OHØ.....ALAND IS.
OJØ, OHØM.....MARKET REEF
OK,OL.....CZECHOSLOVAKIA
ON.....BELGIUM
OX.....GREENLAND
OY.....FAEROES IS.
OZ.....DENMARK

PA-PI.....NETHERLANDS
PJ.....NETHERLANDS ANTILLES
PJ2,9.....CURACAO
PJ3,9.....ARUBA
PJ4,9.....BONAIRE
PJ5,8.....ST. EUSTATIUS
PJ6,8.....SABA IS.
PJ7,8.....SINT MAARTEN
PP-PY.....BRAZIL
PYØ.....FERNANDO DE NORONHA IS.
PYØ.....ST.PETER & ST.PAUL'S ROCKS
PYØ.....TRINIDADE & MARTIM VAZ IS.
PZ.....SURINAM
P29.....PAPUA NEW GUINEA

SJ-SM.....SWEDEN
SP.....POLAND
ST.....SUDAN
SU.....EGYPT
SV.....CRETE,GREECE
SV5.....DODECANESE IS.
S2,S3.....BANGLADESH

TA,TC.....TURKEY
TF.....ICELAND
TG.....GUATEMALA
TI.....COSTA RICA
TI9.....COCOS IS.
TJ.....CAMEROON
TL8.....CENTRAL AFRICAN REPUBLIC
TN8.....REPUBLIC OF CONGO
TR8.....GABON REPUBLIC
TT8.....REPUBLIC OF CHAD
TU2.....IVORY COAST
TY.....PEOPLES REPUBLIC OF BENIN
TZ.....MALI REPUBLIC

UA1,2,3,4,6.....EUROPEAN RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC
UA9,Ø.....ASIATIC RUSSIAN S.F.S.R.
UA1.....FRANZ JOSEF LAND
UA2.....KALININGRADSK
UB5.....UKRAINIAN S.S.R.
UC2.....WHITE RUSSIAN S.S.R.
UD6.....AZERBAIDZHAN S.S.R.
UF6.....GEORGIAN S.S.R.
UG6.....ARMENIAN S.S.R.
UH8.....TURKMEN S.S.R.
UI8.....UZBEK S.S.R.
UJ8.....TADZHIK S.S.R.
UL7.....KAZAKH S.S.R.
UM8.....KIRGHIZ S.S.R.
UN1.....KARELO-FINNISH S.S.R.
UO5.....MOLDAVIAN S.S.R.
UP2.....LITHUANIAN S.S.R.
UQ2.....LATVIAN S.S.R.
UR2.....ESTONIAN S.S.R.

VE.....CANADA
VK.....AUSTRALIA
VO1.....NEWFOUNDLAND
VO2.....LABRADOR
VP1.....BELIZE
VP2.....LEEWARD & WINDWARD IS.
VP5.....TURKS & CAICOS IS.
VP8.....FALKLAND,S.GEORGIA,S.ORKNEY, S.SANDWICH,S.SHETLAND IS.,GRAHAM LAND
VP9.....BERMUDA IS.
VQ9.....CHAGOS & SEYCHELLES IS.
VR1.....BRITISH PHOENIX,GILBERT & OCEAN IS.
VR3.....NORTHERN LINE IS.
VR4.....SOLOMON IS.
VR6.....PITCAIRN IS.
VR7.....CENTRAL & SOUTHERN LINE IS.
VR8.....TUVALU IS.
VS5.....BRUNEI
VS6.....HONG KONG
VS9.....MALDIVE IS.
VS9K.....KAMARAN IS.
VS9M.....MALDIVE IS.
VU2.....INDIA
VU7.....ANDAMAN & NICOBAR IS.
VU7.....LACCADIVE IS.

W.....UNITED STATES OF AMERICA

XE,XF.....MEXICO
XF4.....REVILLA GIGEDO IS.
XT2.....VOLTAIC REPUBLIC
XU.....CAMBODIA/KHMER REPUBLIC
XV5.....SOUTH VIETNAM
XW8.....LAOS
XZ.....BURMA

YA.....AFGHANISTAN
YB-YD.....INDONESIA
YI.....IRAQ
YJ.....NEW HEBRIDES
YK.....SYRIA
YN.....NICARAGUA
YO.....ROMANIA
YS.....EL SALVADOR
YU.....YUGOSLAVIA
YV.....VENEZUELA
YVØ.....AVES IS.

ZA.....ALBANIA
ZB2.....GIBRALTAR
ZD7.....SAINT HELENA IS.
ZD8.....ASCENSION IS.
ZD9.....TRISTAN DA CUNHA & GOUGH IS.
ZE.....RHODESIA
ZF1.....CAYMAN IS.
ZK1.....COOK & MANINIKI IS.
ZK2.....NIUE IS.
ZL.....NEW ZEALAND & AUCKLAND,CAMPBELL,CHATHAM,KERMADEC IS.
ZM7.....TOKELAU IS.
ZP.....PARAGUAY
ZR,ZS1,2,4,5,6.....REPUBLIC OF SOUTH AFRICA
ZS2.....PRINCE EDWARD & MARION IS.
ZR,ZS3.....SOUTHWEST AFRICA (NAMIBIA)

3A.....MONACO
3B6.....AGALEGA IS.
3B7.....ST. BRANDON IS.
3B8.....MAURITIUS IS.
3B9.....RODRIGUEZ IS.
3C.....EQUATORIAL GUINEA
3D2.....FIJI IS.
3D6.....SWAZILAND
3V8.....TUNISIA
3W8.....NORTH VIETNAM
3X.....REPUBLIC OF GUINEA
3Y.....BOUVET IS.

4S7.....SRI LANKA
4U.....UNITED NATIONS,GENEVA
4W.....YEMEN
4X4,4Z4.....ISRAEL

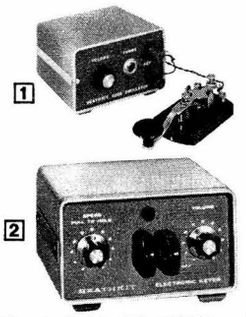
5A.....LIBYAN ARAB REPUBLIC
5B4,ZC4.....CYPRUS
5H1.....ZANZIBAR,TANZANIA
5H3.....TANZANIA
5N2.....NIGERIA
5R8.....MALAGASY REPUBLIC
5T5.....MAURITANIA
5U7.....NIGER
5V.....TOGO
5W1.....WESTERN SAMOA
5X5.....UGANDA
5Z4.....KENYA

6O.....SOMALI REPUBLIC
6W8.....SENEGAL REPUBLIC
6Y5.....JAMAICA

7JI.....OKINO-TORI-SHIMA
7O.....SOUTH YEMEN
7P8.....LESOTHO
7Q7.....MALAWI
7X.....ALGERIA
7Z.....SAUDI ARABIA

8J.....ANTARCTICA
8P6.....BARBADOS IS.
8Q6,VS9M.....MALDIVE IS.
8R.....GUYANA
8Z4.....SAUDI ARABIA/IRAQ NEUTRAL ZONE

9G1.....GHANA
9H1,5.....MALTA
9H4.....GOZO (MALTA)
9I,9J.....ZAMBIA
9K2.....KUWAIT
9L1.....SIERRA LEONE
9M2.....WEST MALAYSIA
9M6.....SABAH
9M8.....SARAWAK
9N1.....NEPAL
9Q5.....REPUBLIC OF ZAIRE
9U5.....BURUNDI
9V1.....REPUBLIC OF SINGAPORE
9X.....RWANDA
9Y4.....TRINIDAD & TOBAGO IS.



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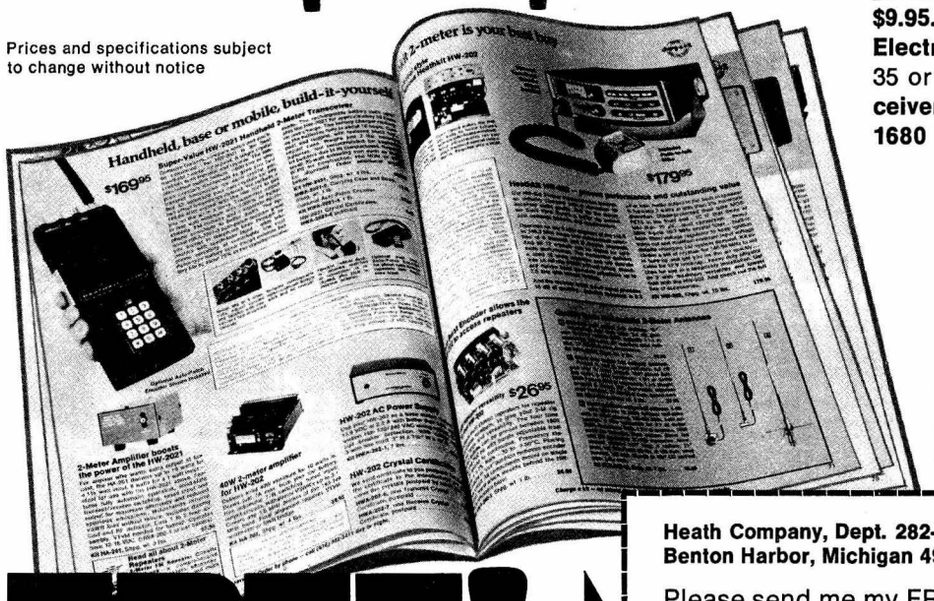
## "There's more for the Ham at HEATH"

Heathkit Ham equipment has been the start, and standby, of thousands of Amateur Radio hobbies the world over. It offers you superior performance, day-in day-out reliability, and more VALUE for your money. And because Heathkit Ham gear comes to you in easy-to-assemble kit form, you learn more about your hobby as you put the kits together, you SAVE money over comparable assembled units, and you can service the equipment and keep it in top operating condition. You get more out of it because we design more into it! So whether you intend to work the world on a couple of watts CW or "go the limit" with state-of-the-art SSB, you'll find Heath is the place to get and keep yourself "in gear."

**1 HD-1416 Code Practice Oscillator, $9.95.** Perfect for beginners. **2 HD-1410 Electronic Code Keyer, $49.95.** Sends 10-35 or 10-60 wpm. **3 HW-8 QRP Transceiver, $129.95.** A super-value. **4 HR-1680 Amateur Receiver, $199.95.** Full 80-10 meter coverage. **5 HW-202, 2-Meter Transceiver, $179.95.** A mobile 2-meter standard. **6 SB-104 Digital CW/SSB Transceiver, $669.95.** Probably the world's finest!

Prices and specifications subject to change without notice

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# PREFIXES—BY COUNTRIES

The following countries listed in alphabetical order by country show international radio amateur prefixes. Characters in ( ) designate the continent and zone in which the country is located. Abbreviations are as follows: A—Asia, AF—Africa, E—Europe, NA—North America, O—Oceania, SA—South America.

AFARS AND ISSAS (FRENCH)..(AF-37).....FL8
AFGHANISTAN.....(A-21).....YA
AGALEGA IS.....(AF-39).....3B6
ALAND IS.....(E-15).....OHØ
ALASKA.....(NA-1).....KL7
ALBANIA.....(E-15).....ZA
ALGERIA.....(AF-33).....7X
AMSTERDAM & ST.PAUL IS....(AF-39).....FB8Z
ANDAMAN & NICOBAR IS.....(A-26).....VU7
ANDORRA.....(E-14).....C31
ANGOLA.....(AF-36).....D2A
ANTARCTICA.....CE9AA-AM,FB8Y,KC4,
LA,LU-Z,UA1,VKØ,VP8,ZL5,3Y,8J
ARGENTINA.....(SA-13).....LU
ARUBA.....(SA-9).....PJ3,9
ASCENSION IS.....(AF-36).....ZD8
AUCKLAND & CAMPBELL IS....(O-32).....ZL
AUSTRALIA.....(O-29 & 30).....VK
AUSTRIA.....(E-15).....OE
AVES IS.....(NA-8).....YVØ
AZORES IS.....(E-14).....CT2

BAHAMA IS.....(NA-8).....C6A
BAHRAIN IS.....(A-21).....A9X
BAJO NUEVO IS.....(NA-7).....HKØ
BAKER IS.....(O-31).....KB6
BALEARIC IS.....(E-14).....EA6
BANGLADESH.....(A-22).....S2,S3
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# RADIO AMATEURS OF THE U.S.A.

VOLUME 54
NUMBER 4

K AND W CALLS

WINTER 1976-77

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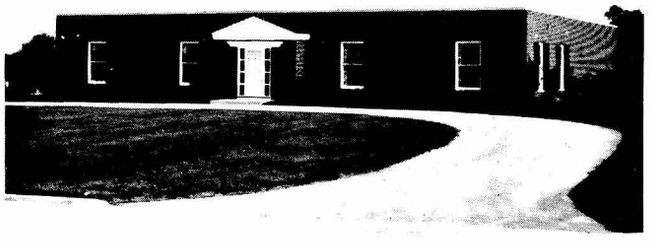

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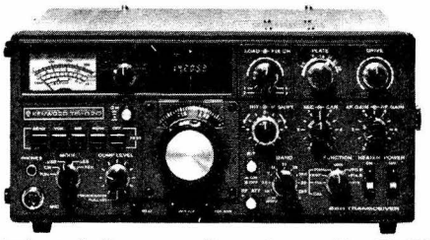

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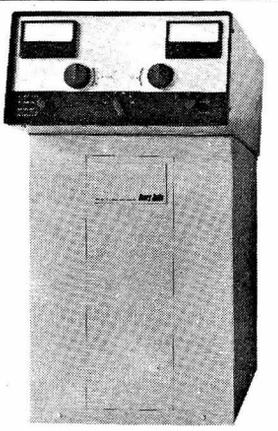
**LINEAR AMPLIFIER**



The 2K-4 linear amplifier offers engineering, construction and features second to none, and at a price that makes it the best amplifier value ever offered to the amateur. Constructed with a ruggedness guaranteed to provide a long life of reliable service, its heavy duty components allow it to loaf along even at full legal power. If you want to put that strong clear signal on the air that you've probably heard from other 2K users, now is the time. Move up to the 2K-4. $995.

## 3K-A

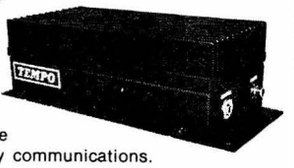
**COMMERCIAL/MILITARY AMPLIFIER**

A high quality linear amplifier designed for commercial and military uses. The 3K-A employs two rugged Eimac 3-500Z grounded grid triodes for superior linearity and provides a conservative three kilowatts PEP input on SSB with efficiencies in the range of 60%. This results in PEP output in excess of 2000 watts. In addition, the 3K-A provides a heavy duty power supply capable of furnishing 2000 watts of continuous duty input for either RTTY or CW with 1200 watts output. Price... $1395.00

Also a complete line of high power linear amplifiers for commercial and military use and industrial power generators for plasma generation. Please call or write.

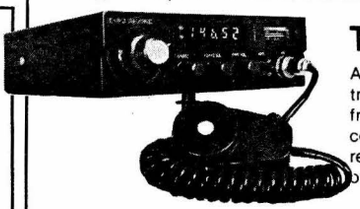
**TEMPO/FMH**

TEMPO/FMH 2 watt VHF/FM hand held. 6 channel capability, solid state, 12 VDC, 144-148 MHz (any 2 MHz), includes 2 pair of crystals, charging terminals for ni-cad cells, S-meter, battery level meter. So much for so little. Also available for Commercial & Marine service...$199.00



**TEMPO VHF/UHF Power amplifiers**

Solid state power amplifiers for use in most base/mobile applications. Increases the range, clarity, reliability and speed of two-way communications. FCC type accepted models also available.



## Tempo VHF/ONE

Advanced design synthesized 2-meter transceiver. Features 5-digit LED receiver frequency display and full 2-meter band coverage (146 to 148 MHz), automatic repeater split, all solid-state, 10 watts output $495. SSB adapter...$225.

**TEMPO CL146A**

VHF/FM mobile transceiver for 2 meter amateur band, 144 to 148 MHz coverage. Compact, ruggedly built and completely solid state. One Channel supplied. . .2 of your choice free...$239.00

**TEMPO 6N2**

Power amplifier for 6 and 2 meter operation. Small, reliable and inexpensive. One full KW of power for SSB operation. Features two Eimac 8874 grounded grid triodes, built-in solid state power supply, built-in antenna relay...$895.00.

**The TEMPO 2002...** for 2 meters only..$745.00
**The TEMPO 2006...** for 6 meters only..$795.00

# Henry Radio

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**931 N. Euclid, Anaheim, Calif. 92801** 714/772-9200
**Butler, Missouri 64730** 816/679-3127

Prices subject to change without notice.